Noble

Access DB# 146293

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: BEN SACKEY Examiner # : 73489 Date: 2/28/05
Art Unit: 1626 Phone Number ~~30~~ 2-0704 Serial Number: 10/049,725
Mail Box and Bldg/Room Location: REM 5B31 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

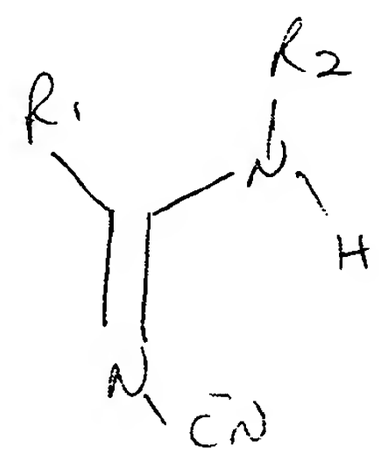
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Substituted n-cyano amidines

Inventors (please provide full names): Fesik et al.

Earliest Priority Filing Date: _____

For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*



R_1 and R_2 are as defined in claims 1 and ~~two~~.

Thanks

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STAFF USE ONLY

Searcher: Mary Lee
Searcher Phone #: _____
Searcher Location: _____
Date Searcher Picked Up: _____
Date Completed: 3/8/05
Searcher Prep & Review Time: 10
Clerical Prep Time: _____
Online Time: 40

Type of Search

NA Sequence (#)_____
AA Sequence (#)_____
Structure (#) 2
Bibliographic 1
Litigation _____
Fulltext _____
Patent Family _____
Other _____

Vendors and cost where applicable

STN 521
Dialog _____
Questel/Orbit _____
Dr.Link _____
Lexis/Nexis_____
Sequence Systems _____
WWW/Internet _____
Other (specify)_____

PTO-1590 (8-01)

STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 146293

TO: Ben Sackey
Location: 5c31/5c18
Art Unit: 1626
Tuesday, March 08, 2005

Case Serial Number: 10/049725

From: Noble Jarrell
Location: Biotech-Chem Library
Rem 1B71
Phone: 272-2556

Noble.jarrell@uspto.gov

Search Notes

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=> d his

     (FILE 'HOME' ENTERED AT 07:28:20 ON 08 MAR 2005)

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L1                STR
L2             13 L1
L3            297 L1 FULL
                  SAV TEM L3 SAC725FO/A

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                  E GESING E/AU
L5            104 E4-10
                  E HENSE A/AU
L6             12 E3-4
                  E KATHER K/AU
L7             42 E3,E5
                  E LEHR S/AU
L8             92 E3,E9-11
                  E RIEBEL H/AU
L9            321 E3-14
                  E ROHE L/AU
L10            45 E3-4
                  E VOIGT K/AU
L11           291 E3-5,E15
                  E DREWES M/AU
L12           250 E3-8
                  E FEUCHT D/AU
L13           172 E3,E6
                  E PONTZEN R/AU
L14           134 E3-4
                  E WETCHOLOWSKY I/AU
L15            61 E3-4
L16            52 L3
L17             3 L16 AND L4-15
L18            49 L16 NOT L17

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L21            42 L18 AND L20
                  SEL HIT RN L21

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L22           232 E1-232
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L23           140 E233-372

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L24            18 L23 AND L21

=> b reg
FILE 'REGISTRY' ENTERED AT 07:58:42 ON 08 MAR 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2005 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.
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STRUCTURE FILE UPDATES: 6 MAR 2005 HIGHEST RN 843607-47-6
DICTIONARY FILE UPDATES: 6 MAR 2005 HIGHEST RN 843607-47-6

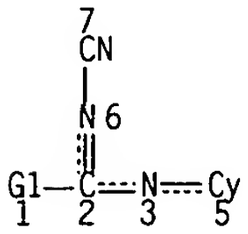
TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> d que sta l3
L1 STR



VAR G1=H/AK/CY
NODE ATTRIBUTES:
CONNECT IS E2 RC AT 3
CONNECT IS E2 RC AT 6
DEFAULT MLEVEL IS ATOM
GGCAT IS PCY AT 5
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE
L3 297 SEA FILE=REGISTRY SSS FUL L1

100.0% PROCESSED 16771 ITERATIONS 297 ANSWERS
SEARCH TIME: 00.00.49

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USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 8 Mar 2005 VOL 142 ISS 11

Search done by Noble Jarrell

FILE LAST UPDATED: 7 Mar 2005 (20050307/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all fhitstr l17 tot

L17 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:76262 HCAPLUS
DN 142:176835
ED Entered STN: 28 Jan 2005
TI Preparation of 3-phenyl-2-pyrazolines as PAR-1 antagonists for treatment of cardiovascular diseases
IN Allerheiligen, Swen; Brohm, Dirk; Diedrichs, Nicole; Froehlen, Britta-Nicole; Gerdes, Christoph; Gnoth, Mark Jean; Heckroth, Heike; Huebsch, Walter; Perzborn, Elisabeth; Stahl, Elke; Voehringer, Verena
PA **Bayer** Healthcare A.-G., Germany
SO PCT Int. Appl., 183 pp.
CODEN: PIXXD2
DT Patent
LA German
IC ICM A61K031-4155
ICS A61P009-00; C07D403-04; C07D409-14; C07D405-14; C07D401-14; C07D413-04; C07D417-04; C07D403-14; C07D401-04; C07D417-14; C07D413-14
CC 28-8 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1, 63
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2005007157	A1	20050127	WO 2004-EP7227	20040702
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 102004010545	A1	20050224	DE 2004-102004010545	20040304
PRAI DE 2003-10331951	A	20030715		
DE 2004-102004010545	A	20040304		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2005007157	ICM	A61K031-4155
	ICS	A61P009-00; C07D403-04; C07D409-14; C07D405-14; C07D401-14; C07D413-04; C07D417-04; C07D403-14; C07D401-04; C07D417-14; C07D413-14

GI

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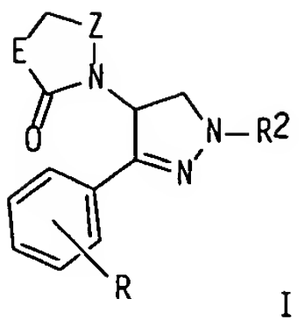
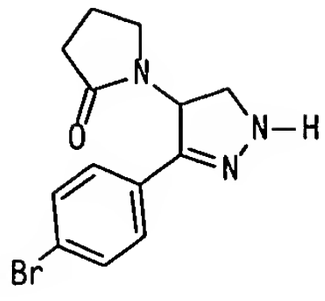


I



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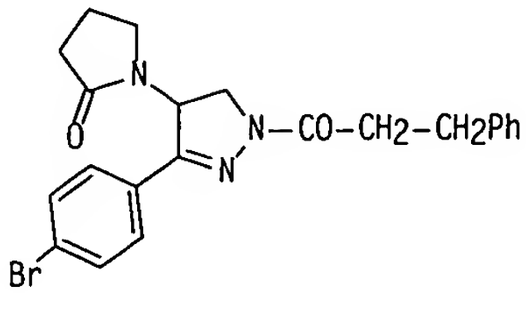

III

AB Title compds. I [R = (R1)m; Z = (CH2)n; m = 0-3; n = 1-3; R1 = halo, OH, NH2, etc.; E = CH2, NH, O, etc.; R2 = COX, CONHY, CSNHY, etc.; X = R3, fluoro-substituted alkylen-R4; Y = R3, fluoro-substituted alkylen-R4; R3 = 1,3-benzodioxol, 2,2-difluoro-1,3-benzodioxol, 2,3-dihydro-1,4-benzodioxin, etc.; R4 = H, 1,3-benzodioxol, 2,2-difluoro-1,3-benzodioxol, etc.] and their pharmaceutically acceptable salts and formulations were prepared For example, 3-phenylpropionyl chloride N-acylation of pyrazole II, e.g., prepared from 4-bromophenacyl bromide in 2-steps, afforded phenylpyrazoline III in 72% yield. In PAR-1 antagonist assays, 10-examples of compds. I exhibited IC50 values ranging from 2-220 nM. Compds. I are claimed to be useful for the treatment of cardiovascular and thromboembolic diseases.

ST phenylpyrazoline prepn PAR1 antagonist; cardiovascular agent prepn PAR1 antagonist; antithrombotic agent prepn PAR1 antagonist

IT Thrombin receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(PAR-1 (proteinase-activated receptor 1); preparation of phenylpyrazolines as PAR-1 antagonists for treatment of cardiovascular diseases)

IT Proteinase-activated receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(PAR-1; preparation of phenylpyrazolines as PAR-1 antagonists for treatment of cardiovascular diseases)

IT Cardiovascular agents
Human
(preparation of phenylpyrazolines as PAR-1 antagonists for treatment of cardiovascular diseases)

IT Embolism
(thromboembolism, treatment of; preparation of phenylpyrazolines as PAR-1 antagonists for treatment of cardiovascular diseases)

IT Anticoagulants
Cardiovascular system, disease
(treatment of; preparation of phenylpyrazolines as PAR-1 antagonists for treatment of cardiovascular diseases)

IT 153337-19-0P 179537-57-6P 179537-60-1P 832748-23-9P 832748-24-0P
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RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of phenylpyrazolines as PAR-1 antagonists for treatment of cardiovascular diseases)

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832751-93-6P 832751-95-8P 832751-97-0P 832751-99-2P 832752-01-9P
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832756-89-5P 832756-90-8P 832756-91-9P 832756-92-0P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of phenylpyrazolines as PAR-1 antagonists for treatment of cardiovascular diseases)

IT 50-00-0, Formaldehyde, reactions 64-04-0, (2-Phenylethyl)amine
77-78-1, Dimethylsulfate 99-73-0 106-47-8, 4-Chloroaniline, reactions
107-85-7, 3-Methylbutan-1-amine 108-91-8, Cyclohexylamine, reactions
109-73-9, Butylamine, reactions 110-58-7, n-Pentylamine 140-77-2,
Cyclopentanepropanoic acid 143-33-9, Sodium cyanide 403-29-2
460-39-9, 3,3,3-Trifluoropropan-1-amine 497-25-6, 1,3-Oxazolidin-2-one
530-62-1 536-38-9 616-45-5, 2-Pyrrolidinone 645-45-4,
3-Phenylpropionyl chloride 1505-47-1, 4-Thiophenbutanoic acid
1943-82-4, (2-Isocyanatoethyl)benzene 2038-57-5, 3-Phenylpropan-1-amine
2525-62-4, Hexylisocyanate 2706-56-1, (2-Pyridin-2-ylethyl)amine
3218-02-8, 1-Cyclohexylmethanamine 4441-63-8, Cyclohexanebutanoic acid
5391-39-9, 1-Acetylimidazolidin-2-one 5452-35-7, Cycloheptylamine
7803-57-8, Hydrazine hydrate 13078-79-0, 2-(3-Chlorophenyl)ethanamine
13078-80-3, 2-(2-Chlorophenyl)ethylamine 17247-58-4,
Bromomethylcyclobutane 22236-10-8, 4-Difluoromethoxyphenylamine
30433-91-1, 2-(2-Thienyl)ethanamine 34857-66-4 39479-97-5
39825-36-0, Isopropyl-.beta.-alaninate 54303-30-9,
2-(Ethylmercapto)ethylamine Hydrochloride 55204-93-8,
2-Chlorobenzylisocyanate 59311-67-0, 2-(3-Thienyl)ethanamine
75653-86-0, 3-(1H-Pyrazol-1-yl)propan-1-amine 79463-77-7 832753-65-8,
3-[(4-tert-Butylcyclohexyl)oxy]propan-1-amine 832753-69-2,
1-[3-(Trifluoromethyl)cyclohexyl]methanamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of phenylpyrazolines as PAR-1 antagonists for treatment of cardiovascular diseases)

IT 4426-03-3P, Cyclobutylacetonitrile 43003-15-2P 60637-97-0P,
2-Cyclobutylethylamine 148668-51-3P 148668-54-6P 153337-72-5P
153337-77-0P, 1-[3-(4-Fluorophenyl)-4,5-dihydro-1H-pyrazol-4-yl]pyrrolidin-2-one 470477-87-3P, 5-Methoxy-3,4-dihydro-2H-pyrrole 832753-10-3P,
1-[2-(4-Bromophenyl)-2-oxoethyl]pyrrolidin-2-one 832753-13-6P,
1-[2-(4-Fluorophenyl)-2-oxoethyl]pyrrolidin-2-one 832753-16-9P
832753-18-1P 832753-20-5P 832753-22-7P 832753-24-9P 832753-27-2P,
3-[2-(4-Bromophenyl)-2-oxoethyl]-1,3-oxazolidin-2-one 832753-29-4P,
1-Acetyl-3-[2-(4-bromophenyl)-2-oxoethyl]imidazolidin-2-one 832753-35-2P
832753-37-4P 832753-39-6P 832753-41-0P 832753-44-3P 832753-46-5P
832753-47-6P, 1-[1-(4-Chlorobenzoyl)vinyl]pyrrolidin-2-one 832753-51-2P
832753-53-4P 832753-56-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of phenylpyrazolines as PAR-1 antagonists for treatment of cardiovascular diseases)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Ahn, H; DRUGS OF THE FUTURE 2001, V26(11), P1065 HCAPLUS
(2) Bayer Ag; EP 0529451 A 1993 HCAPLUS
(3) Bayer Ag; EP 0532918 A 1993 HCAPLUS

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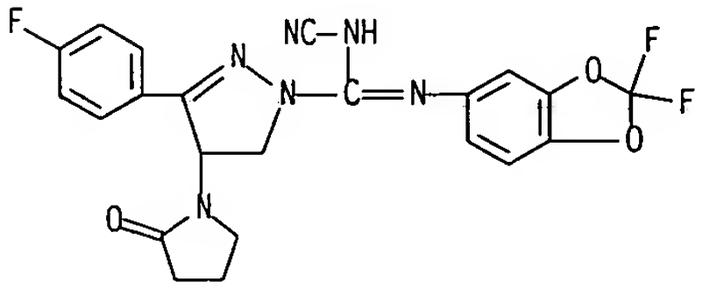
(4) Bayer Ag; EP 0591780 A 1994 HCAPLUS
(5) Erdelen, C; WO 9324463 A 1993 HCAPLUS
(6) Rohm & Haas; EP 0466408 A 1992 HCAPLUS

IT **832749-33-4P**
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of phenylpyrazolines as PAR-1 antagonists for treatment of cardiovascular diseases)

RN 832749-33-4 HCAPLUS
CN 1H-Pyrazole-1-carboximidamide, N-cyano-N'-(2,2-difluoro-1,3-benzodioxol-5-yl)-3-(4-fluorophenyl)-4,5-dihydro-4-(2-oxo-1-pyrrolidinyl)- (9CI) (CA INDEX NAME)



L17 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:807725 HCAPLUS
DN 133:350059
ED Entered STN: 16 Nov 2000
TI Herbicidal N-cyano-amidines
IN **Gesing, Ernst R. F.**; **Hense, Achim**; **Kather, Kristian**; **Lehr, Stefan**; **Riebel, Hans-Jochem**; **Rohe, Lothar**; Voigt, Katharina; **Drewes, Mark Wilhelm**; **Feucht, Dieter**; **Pontzen, Rolf**; **Wetcholowsky, Ingo**
PA **Bayer** A.-G., Germany
SO Ger. Offen., 14 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C07C261-04
ICS A01N047-40; C07D215-38; C07D221-04; C07D333-50; C07D335-06; C07D311-04
CC 25-24 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 5

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 19921886	A1	20001116	DE 1999-19921886	19990512
CA 2373429	AA	20001123	CA 2000-2373429	20000504
WO 2000069813	A1	20001123	WO 2000-EP4013	20000504
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
BR 2000010447	A	20020213	BR 2000-10447	20000504
EP 1178956	A1	20020213	EP 2000-929495	20000504
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

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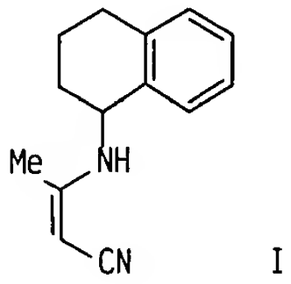
	JP 2002544255	T2	20021224	JP 2000-618230	20000504
	AU 765922	B2	20031002	AU 2000-47553	20000504
PRAI	DE 1999-19921886	A	19990512		
	WO 2000-EP4013	W	20000504		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 19921886	ICM	C07C261-04
	ICS	A01N047-40; C07D215-38; C07D221-04; C07D333-50; C07D335-06; C07D311-04
DE 19921886	ECLA	A01N047/40; C07C261/04; C07D333/54B

OS MARPAT 133:350059

GI



I

AB N-Cyano-amidines R2NHCR1:NCN [R1 = H, (un)substituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl, aryl, aralkyl; R2 = (un)substituted benzannellated, pyridoannellated, thienoannellated cycloalk(en)yl, oxacycloalk(en)yl or thiacycloalk(en)yl] were prepared for use as herbicides. Thus, NCN:CMeOMe was treated with 1,2,3,4-tetrahydro-1-naphthylamine to give the cyano amidine I. I was effective in both pre- and post-emergence tests.

ST cyano amidine prepn herbicide

IT Herbicides
(preparation of herbicidal N-cyano-amidines)

IT **306284-52-6P**
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of herbicidal N-cyano-amidines)

IT **255374-61-9P 255374-62-0P 255374-63-1P**
255374-64-2P 255374-65-3P 255374-66-4P
306284-53-7P 306284-54-8P 306284-55-9P
306284-56-0P 306284-57-1P 306284-58-2P
306284-59-3P 306284-60-6P 306284-61-7P
306284-62-8P 306284-63-9P 306284-64-0P
306284-65-1P 306284-66-2P 306284-67-3P
306284-68-4P 306284-69-5P 306284-70-8P
RL: AGR (Agricultural use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of herbicidal N-cyano-amidines)

IT 2217-40-5, 1,2,3,4-Tetrahydro-1-naphthylamine 5652-84-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of herbicidal N-cyano-amidines)

IT **306284-52-6P**
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of herbicidal N-cyano-amidines)

RN 306284-52-6 HCAPLUS

CN Ethanimidamide, N-cyano-N'-(1,2,3,4-tetrahydro-1-naphthalenyl)- (9CI) (CA INDEX NAME)

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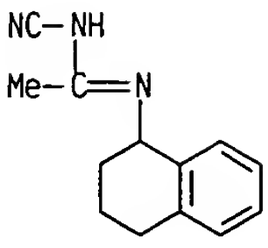

L17 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:54236 HCAPLUS
DN 132:107782
ED Entered STN: 23 Jan 2000
TI Preparation of N-arylalkylimidamides as pesticides
IN **Riebel, Hans-Jochem**; Gerdes, Peter; **Gesing, Ernst Rf.**; **Hense, Achim**; Kanellakopulos, Johannes; **Kather, Kristian**; Kirsten, Rolf; **Lehr, Stefan**; **Rohe, Lothar**; Voigt, Katharina; Wollweber, Detlef; Andersch, Wolfram
PA **Bayer** A.-G., Germany
SO Ger. Offen., 66 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C07C261-04
ICS C07C323-32; C07C317-32; C07C257-22; A01N037-52; C07D333-04; C07D325-00; C07D315-00; C07D277-22
CC 25-19 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 5
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 19924273	A1	20000120	DE 1999-19924273	19990527
CA 2337773	AA	20000127	CA 1999-2337773	19990707
WO 2000003976	A1	20000127	WO 1999-EP4747	19990707
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9951573	A1	20000207	AU 1999-51573	19990707
BR 9912242	A	20010410	BR 1999-12242	19990707
EP 1097128	A1	20010509	EP 1999-936489	19990707
EP 1097128	B1	20040512		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002520385	T2	20020709	JP 2000-560085	19990707
AT 266631	E	20040515	AT 1999-936489	19990707
ES 2221407	T3	20041216	ES 1999-936489	19990707
EG 22587	A	20030430	EG 1999-863	19990715
US 6638979	B1	20031028	US 2001-743588	20010205
PRAI DE 1998-19832447	A1	19980718		
DE 1999-19924273	A	19990527		
WO 1999-EP4747	W	19990707		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 19924273	ICM	C07C261-04
	ICS	C07C323-32; C07C317-32; C07C257-22; A01N037-52; C07D333-04; C07D325-00; C07D315-00; C07D277-22
DE 19924273	ECLA	A01N047/40; C07C261/04; C07C317/46; C07C323/41;

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C07D277/64; C07D307/81; C07D313/12; C07D317/5;
C07D321/12; C07D333/20; C07D333/28
WO 2000003976 ECLA A01N047/40; C07D321/12; C07D333/20; C07D333/28;
C07C261/04; C07C317/46; C07C323/41; C07D277/6;
C07D307/81; C07D313/12; C07D317/58
US 6638979 ECLA A01N047/40; C07C317/46; C07C323/41; C07D277/64;
C07D307/81; C07D313/12; C07D317/58; C07D321/1;
C07D333/20; C07D333/28; C07C261/04

OS MARPAT 132:107782

AB RNH:CR1NR2R3 [R = cyano or NO2; R1 = H, (cyclo)alkyl, Ph, etc.; R2 = H, (cyclo)alkyl, etc.; R3 = CR4R5XR6, YR7, OR8; R4,R5 = H or (un)substituted (cyclo)alkyl; R6,R7 = aryl, cycloalk(en)yl, non-N-containing heterocyclyl, etc.; R8 = alkyl or (un)substituted aryl; X = bond alkylene(oxy), etc.; Y = bond oxyalkylene, etc.] were prepared Thus, (R)-H2NCHMeC6H4Cl-4 was amidated by MeC(:NCN)OMe to give (R)-NCN:CMeNHCHMeC6H4Cl-4 (I). Data for nematocidal activity of I were given.

ST arylalkylimidamide prepn pesticide

IT Pesticides
(N-arylalkylimidamides)

IT Acaricides
Insecticides
Nematocides
(preparation of N-arylalkylimidamides as pesticides)

IT 255372-55-5P 255372-56-6P 255372-57-7P 255372-58-8P 255372-59-9P
255372-60-2P 255372-61-3P 255372-62-4P 255372-63-5P 255372-64-6P
255372-65-7P 255372-66-8P 255372-67-9P 255372-68-0P 255372-69-1P
255372-70-4P 255372-71-5P 255372-72-6P 255372-73-7P 255372-74-8P
255372-76-0P 255372-77-1P 255372-78-2P 255372-79-3P 255372-80-6P
255372-81-7P 255372-82-8P 255372-83-9P 255372-84-0P 255372-85-1P
255372-86-2P 255372-87-3P 255372-88-4P 255372-89-5P 255372-90-8P
255372-91-9P 255372-92-0P 255372-93-1P 255372-94-2P 255372-95-3P
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255373-01-4P 255373-02-5P 255373-03-6P 255373-04-7P 255373-05-8P
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255373-12-7P 255373-13-8P 255373-14-9P 255373-15-0P 255373-16-1P
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255373-94-5P 255373-95-6P 255373-96-7P 255373-97-8P 255373-98-9P
255373-99-0P 255374-00-6P 255374-01-7P 255374-02-8P 255374-03-9P
255374-04-0P 255374-05-1P 255374-06-2P 255374-07-3P 255374-08-4P
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255374-60-8P **255374-61-9P** **255374-62-0P**
255374-63-1P **255374-64-2P** **255374-65-3P**
255374-66-4P 255374-67-5P 255374-68-6P 255374-69-7P
255374-70-0P **255374-71-1P** 255374-72-2P 255374-73-3P

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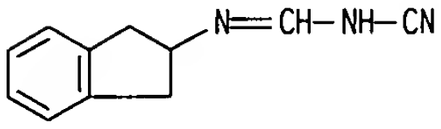
255374-74-4P 255374-75-5P
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of N-arylalkylimidamides as pesticides)
IT 27298-99-3, (R)-4-Chloro-.alpha.-methylbenzenemethanamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of N-arylalkylimidamides as pesticides)
IT **255374-61-9P**
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of N-arylalkylimidamides as pesticides)
RN 255374-61-9 HCAPLUS
CN Methanimidamide, N-cyano-N'-(2,3-dihydro-1H-inden-2-yl)- (9CI) (CA INDEX NAME)



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L24 ANSWER 1 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1996:513746 HCAPLUS
DN 125:157769
ED Entered STN: 28 Aug 1996
TI Synthesis and Selective Coronary Vasodilatory Activity of 3,4-Dihydro-2,2-bis(methoxymethyl)-2H-1-benzopyran-3-ol Derivatives: Novel Potassium Channel Openers
AU Cho, Hidetsura; Katoh, Susumu; Sayama, Shinsuke; Murakami, Kengo; Nakanishi, Hiroyuki; Kajimoto, Yasuyuki; Ueno, Hiroshi; Kawasaki, Hisashi; Aisaka, Kazuo; Uchida, Itsuo
CS Central Pharmaceutical Research Institute, Japan Tabacco Inc., Takatsuki, 569, Japan
SO Journal of Medicinal Chemistry (**1996**), 39(19), 3797-3805
CODEN: JMCMAR; ISSN: 0022-2623
PB American Chemical Society
DT Journal
LA English
CC 1-3 (Pharmacology)
Section cross-reference(s): 27
AB A variety of compds. having a benzopyran such as levcromakalim generally exhibit potent antihypertensive activity. During extensive investigations aimed toward identifying K+ channel openers having selective coronary vasodilation without potent hypotensive and tachycardia effects, we synthesized a series of 3,4-dihydro-2H-1-benzopyran-3-ol derivs. modified at positions 2, 4, and 6 in the benzopyran ring. Initially, compds. having two methoxymethyl groups at position 2 were found to show a selective effect on coronary blood flow (CoBF) relative to mean arterial pressure (MAP) in anesthetized dogs. To find more potent vasodilators, various benzopyran derivs. modified at position 4 were synthesized and structure-activity relationships were examined by evaluation of the extent and duration of the increase in CoBF in anesthetized dogs. As a result, compds. having a (1,6-dihydro-6-oxopyridazin-3-yl)amino group at position 4, in addition to the two methoxymethyl groups at position 2, were found to be more potent and to have an improved duration of action. Among these compds., JTV-506, (-)-(3S,4R)-6-cyano-3,4-dihydro-4-[(1,6-dihydro-1-methyl-6-oxopyridazin-3-yl)amino]-2,2-bis(methoxymethyl)-2H-1-benzopyran-3-ol, exhibited good selectivity for its effect. Administration of this compound

Search done by Noble Jarrell

(0.03 mg/kg, po) elicited an increase of CoBF without a change of systemic blood pressure and heart rate (HR) in conscious dogs. Further evaluation was performed with respect to (i) the selectivity of its action on the coronary artery vs. the aorta and (ii) its effects on MAP, HR, and electrocardiog. ST elevation. As a result, JTV-506 was selected as a potent and selective coronary vasodilator with various pharmacol. features favoring clin. development.

ST benzopyranol deriv prepn coronary vasodilator

IT Vasodilators
(coronary, preparation and selective coronary vasodilatory activity of dihydrobis(methoxymethyl)benzopyranol derivs.: novel potassium channel openers)

IT Ion channel openers
(potassium, preparation and selective coronary vasodilatory activity of dihydrobis(methoxymethyl)benzopyranol derivs.: novel potassium channel openers)

IT Molecular structure-biological activity relationship
(vasodilating, preparation and selective coronary vasodilatory activity of dihydrobis(methoxymethyl)benzopyranol derivs.: novel potassium channel openers)

IT **149342-19-8**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(preparation and selective coronary vasodilatory activity of dihydrobis(methoxymethyl)benzopyranol derivs.: novel potassium channel openers)

IT 170148-35-3P 170148-36-4P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation and selective coronary vasodilatory activity of dihydrobis(methoxymethyl)benzopyranol derivs.: novel potassium channel openers)

IT **168819-36-1P 168819-41-8P 168819-44-1P**
168819-52-1P 168819-55-4P **168819-64-5P 168819-80-5P**
169273-23-8P 170148-29-5P 170148-30-8P 170148-41-1P
170148-42-2P 170148-44-4P 170148-59-1P 170148-61-5P 170148-65-9P
170148-67-1P 170148-76-2P 170148-77-3P 170148-78-4P 170148-79-5P
170148-80-8P 170148-81-9P 170148-82-0P 170148-85-3P 170148-87-5P
170148-88-6P 170148-90-0P 170148-91-1P 170148-99-9P 170149-04-9P
170149-06-1P **180307-04-4P 180307-05-5P** 180307-06-6P
180307-07-7P 180307-08-8P 180307-09-9P **180470-15-9P**
180470-16-0P **180470-17-1P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and selective coronary vasodilatory activity of dihydrobis(methoxymethyl)benzopyranol derivs.: novel potassium channel openers)

IT 103-71-9, Phenyl isocyanate, reactions 106-94-5 586-75-4, p-Bromobenzoyl chloride 623-69-8, 1,3-Dimethoxypropan-2-ol 5436-01-1 5469-69-2, 3-Amino-6-chloropyridazine 10400-19-8, Nicotinoyl chloride 13506-28-0 35794-84-4, 5-Cyano-2-hydroxyacetophenone 41835-08-9, N-Cyano-N'-phenylthiourea 57041-95-9 168819-61-2 180307-10-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and selective coronary vasodilatory activity of dihydrobis(methoxymethyl)benzopyranol derivs.: novel potassium channel openers)

IT 18664-32-9P, 1,3-Dimethoxypropan-2-one 168819-11-2P 168819-12-3P 168819-13-4P 168819-65-6P 168819-66-7P 168819-67-8P 169102-75-4P 169102-76-5P 169102-78-7P 170148-33-1P 170149-21-0P 180470-18-2P 180470-19-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

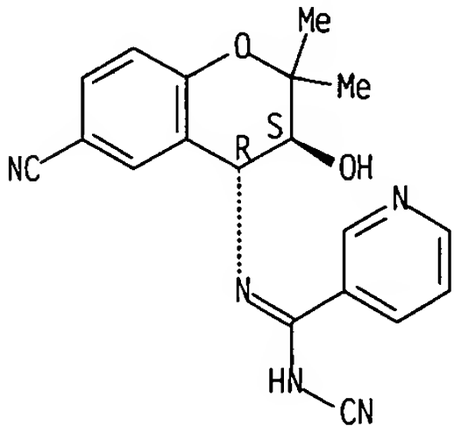
Search done by Noble Jarrell

(preparation and selective coronary vasodilatory activity of dihydrobis(methoxymethyl)benzopyranol derivs.: novel potassium channel openers)

IT **149342-19-8**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(preparation and selective coronary vasodilatory activity of dihydrobis(methoxymethyl)benzopyranol derivs.: novel potassium channel openers)

RN 149342-19-8 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, (3S-trans)- (9CI) (CA INDEX NAME)

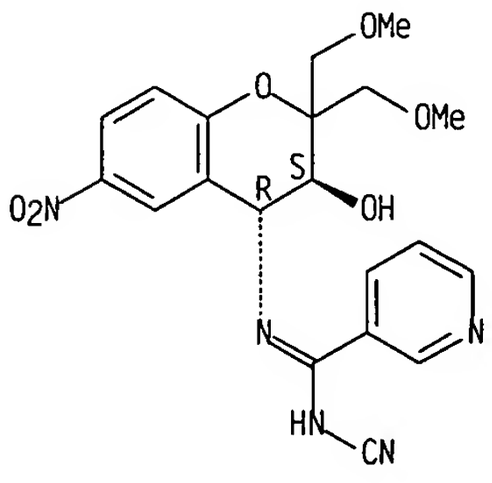
Absolute stereochemistry.
Double bond geometry unknown.



IT **168819-36-1P 168819-41-8P 168819-44-1P**
168819-64-5P 168819-80-5P 169273-23-8P
180307-04-4P 180307-05-5P 180470-15-9P
180470-17-1P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and selective coronary vasodilatory activity of dihydrobis(methoxymethyl)benzopyranol derivs.: novel potassium channel openers)

RN 168819-36-1 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-6-nitro-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

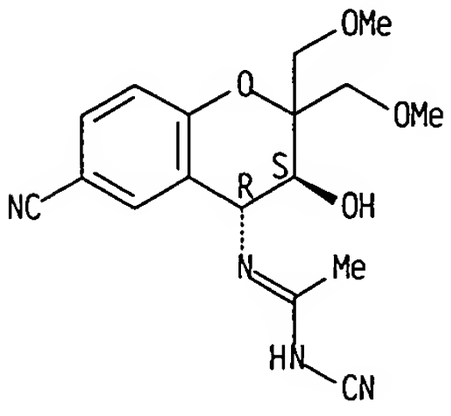
Absolute stereochemistry.
Double bond geometry unknown.



RN 168819-41-8 HCAPLUS
CN Ethanimidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

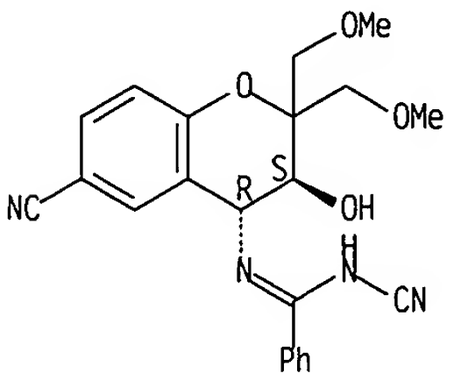
Search done by Noble Jarrell

Absolute stereochemistry.
Double bond geometry unknown.

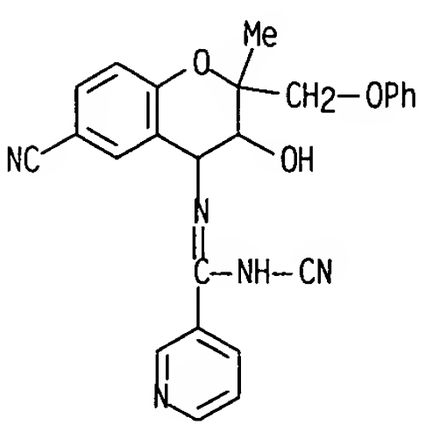


RN 168819-44-1 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



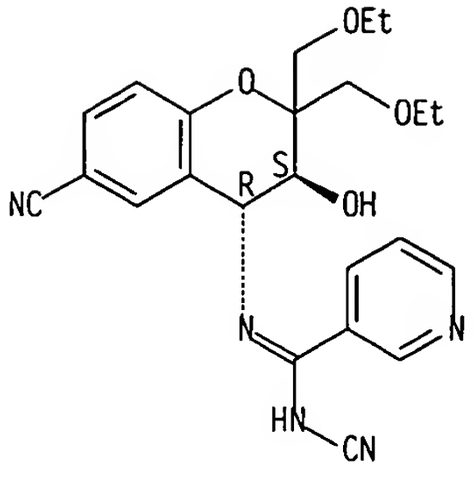
RN 168819-64-5 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2-methyl-2-(phenoxymethyl)-2H-1-benzopyran-4-yl]- (9CI) (CA INDEX NAME)



RN 168819-80-5 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-2,2-bis(ethoxymethyl)-3,4-dihydro-3-hydroxy-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

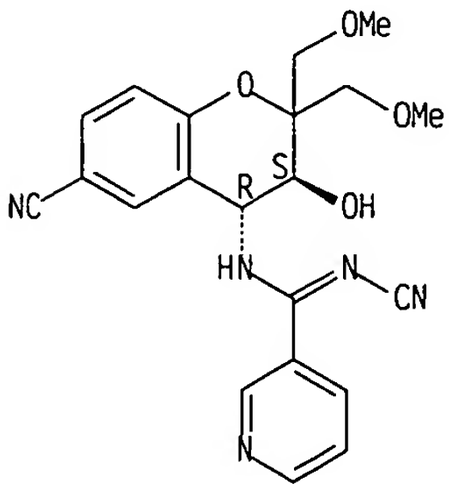
Absolute stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell

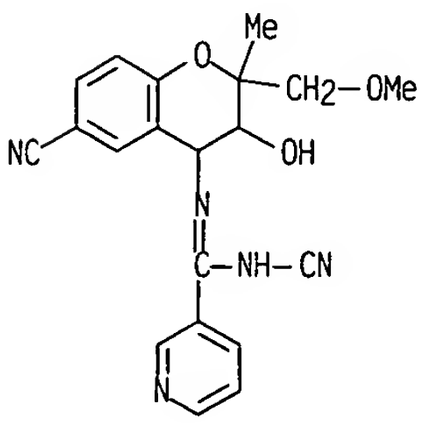


RN 169273-23-8 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.

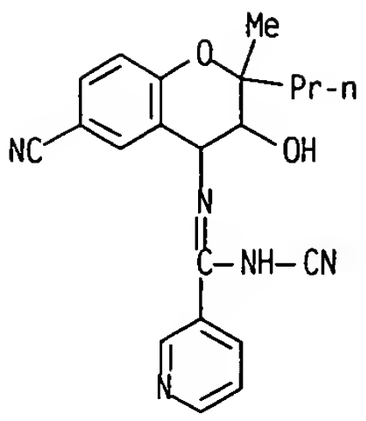


RN 180307-04-4 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2-(methoxymethyl)-2-methyl-2H-1-benzopyran-4-yl]- (9CI) (CA INDEX NAME)



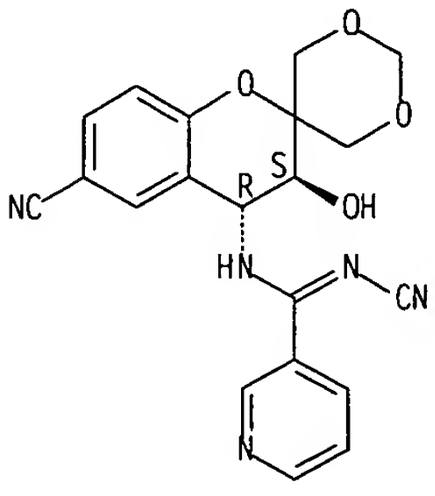
RN 180307-05-5 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2-methyl-2-propyl-2H-1-benzopyran-4-yl)- (9CI) (CA INDEX NAME)

Search done by Noble Jarrell



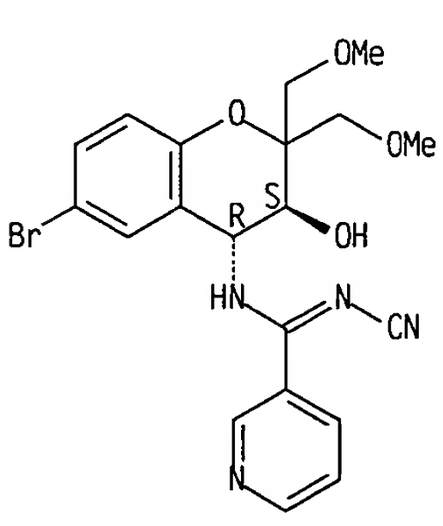
RN 180470-15-9 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxyspiro[2H-1-benzopyran-2,5'-[1,3]dioxan]-4-yl)-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



RN 180470-17-1 HCAPLUS
CN 3-Pyridinecarboximidamide, N-[6-bromo-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-N'-cyano-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



L24 ANSWER 2 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1995:849162 HCAPLUS
DN 123:285779
ED Entered STN: 12 Oct 1995
TI Preparation of chroman derivs. as coronary vasodilators
IN Kato, Susumu; Cho, Hidetsura; Sayama, Shinsuke; Kajimoto, Yasuyuki;

Search done by Noble Jarrell

Shibata, Saizo; Mizushima, Atsushi; Yamaki, Tukuo; Uchida, Itsuo
PA Japan Tobacco Inc., Japan
SO PCT Int. Appl., 99 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM C07D311-68
ICS C07D311-58; C07D405-12; C07D407-12; C07D409-12; C07D413-12;
C07D417-12; C07D493-04; A61K031-35; C07F007-18
CC 27-14 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 1

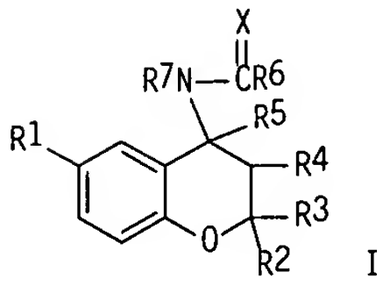
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9502589	A1	19950126	WO 1993-JP992	19930716 <--

W: CA, JP, KR, US
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
PRAI WO 1993-JP992 19930716 <--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9502589	ICM	C07D311-68
	ICS	C07D311-58; C07D405-12; C07D407-12; C07D409-12; C07D413-12; C07D417-12; C07D493-04; A61K031-35; C07F007-18

OS MARPAT 123:285779
GI



I

AB Chroman derivs. I (R1 = cyano, nitro, halogen; R2 = alkoxyalkyl, alkoxycarbonyl, hydroxyalkyl, aryloxyalkyl, tert-butyldimethylsilyoxyalkyl; R3 = H, alkyl, alkoxyalkyl, alkoxycarbonyl, hydroxyalkyl, etc.; R4 = H, OH, formyloxy, alkanoyloxy; R5 = H; R4R5 may form bond; R6 = substituted aryl, heteroaryl, arylamino, aryloxy, alkyl; X = N-CN, O, S; R7 = H, lower alkyl), useful as coronary vasodilators, were prepared Thus, stirring Et N-cyano-3-fluorobenzimidate with (3S,4R)-4-amino-6-cyano-3,4-dihydro-2,2-di(methoxymethyl)-3-hydroxy-2H-1-benzopyran in MeOH at room temperature for 1 day gave N'-cyano-N-[(3S,4R)-6-cyano-3,4-dihydro-2,2-di(methoxymethyl)-3-hydroxy-2H-1-benzopyran-4-yl]-3-fluorobenzamidine (II). II at 30 .mu.g/kg i.v. in dogs increased coronary blood flow with little blood pressure lowering effect.

ST chroman prepn coronary vasodilator
IT Vasodilators
(coronary, preparation of chroman derivs. as coronary vasodilators)
IT **168819-47-4P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of chroman derivs. as coronary vasodilators)
IT 98-88-4, Benzoyl chloride 103-71-9, reactions 621-87-4, 2-Propanone, 1-phenoxy- 1450-75-5 1450-76-6 1558-82-3, Ethanimidic acid, N-cyano-, ethyl ester 5271-67-0, Thenoyl chloride 5460-70-8,

Search done by Noble Jarrell

2-Propanone,1,3-diethoxy- 18664-32-9 20260-53-1, 3-Pyridinecarbonyl chloride, hydrochloride 33490-49-2 35794-84-4, Benzonitrile, 3-acetyl-4-hydroxy- 41835-08-9 79463-77-7 107326-06-7 133300-43-3 133300-49-9 134112-92-8 134113-09-0 149279-00-5, Benzenecarboximidic acid, N-cyano-4-fluoro-, methyl ester 149279-01-6, 3-Pyridinecarboximidic acid, N-cyano-, methyl ester 149279-07-2 149279-08-3 168819-01-0 168819-22-5 168819-49-6 168819-61-2 168819-83-8 169102-74-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of chroman derivs. as coronary vasodilators)

IT 168819-02-1P 168819-03-2P 168819-04-3P 168819-05-4P 168819-06-5P
168819-11-2P 168819-12-3P 168819-13-4P 168819-14-5P 168819-15-6P
168819-17-8P 168819-18-9P 168819-19-0P 168819-20-3P 168819-21-4P
168819-25-8P 168819-26-9P 168819-27-0P 168819-28-1P 168819-29-2P
168819-31-6P 168819-32-7P 168819-34-9P 168819-35-0P 168819-62-3P
168819-63-4P 168819-65-6P 168819-66-7P 168819-67-8P 168819-68-9P
168819-69-0P 168819-71-4P 168819-72-5P 168819-75-8P 168819-76-9P
168819-77-0P 168819-78-1P 168819-79-2P 169102-75-4P 169102-76-5P
169102-77-6P 169102-78-7P 169102-79-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of chroman derivs. as coronary vasodilators)

IT 168819-33-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of chroman derivs. as coronary vasodilators)

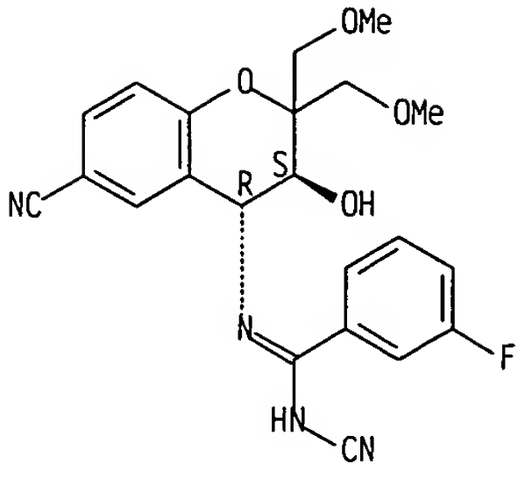
IT **168819-07-6P 168819-08-7P 168819-09-8P**
168819-10-1P 168819-16-7P 168819-23-6P
168819-24-7P 168819-30-5P 168819-36-1P
168819-37-2P 168819-38-3P 168819-39-4P
168819-40-7P 168819-41-8P 168819-42-9P
168819-43-0P 168819-44-1P 168819-45-2P
168819-46-3P 168819-48-5P 168819-50-9P
168819-51-0P 168819-52-1P 168819-53-2P 168819-54-3P 168819-55-4P
168819-56-5P 168819-57-6P **168819-58-7P** 168819-59-8P
168819-60-1P **168819-64-5P 168819-70-3P**
168819-73-6P 168819-74-7P 168819-80-5P
168819-81-6P 168819-82-7P 169273-22-7P
169273-23-8P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of chroman derivs. as coronary vasodilators)

IT **168819-47-4P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of chroman derivs. as coronary vasodilators)

RN 168819-47-4 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-3-fluoro-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.

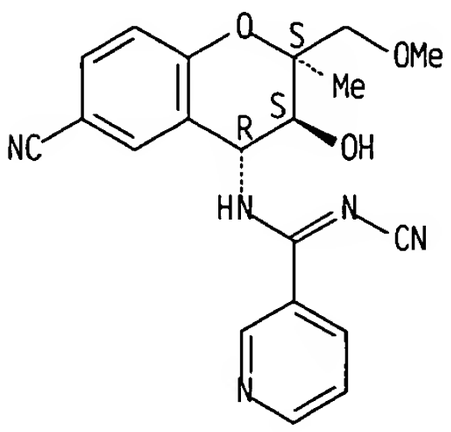
Search done by Noble Jarrell



IT 168819-07-6P 168819-08-7P 168819-09-8P
168819-10-1P 168819-16-7P 168819-23-6P
168819-24-7P 168819-30-5P 168819-36-1P
168819-37-2P 168819-38-3P 168819-39-4P
168819-40-7P 168819-41-8P 168819-42-9P
168819-43-0P 168819-44-1P 168819-45-2P
168819-46-3P 168819-48-5P 168819-50-9P
168819-58-7P 168819-64-5P 168819-70-3P
168819-73-6P 168819-74-7P 168819-80-5P
168819-81-6P 168819-82-7P 169273-22-7P
169273-23-8P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of chroman derivs. as coronary vasodilators)

RN 168819-07-6 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2-(methoxymethyl)-2-methyl-2H-1-benzopyran-4-yl]-, (2.alpha.,3.alpha.,4.beta.)- (9CI) (CA INDEX NAME)

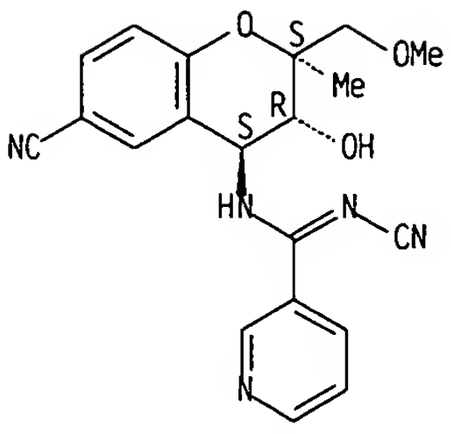
Relative stereochemistry.
Double bond geometry unknown.



RN 168819-08-7 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2-(methoxymethyl)-2-methyl-2H-1-benzopyran-4-yl]-, (2.alpha.,3.beta.,4.alpha.)- (9CI) (CA INDEX NAME)

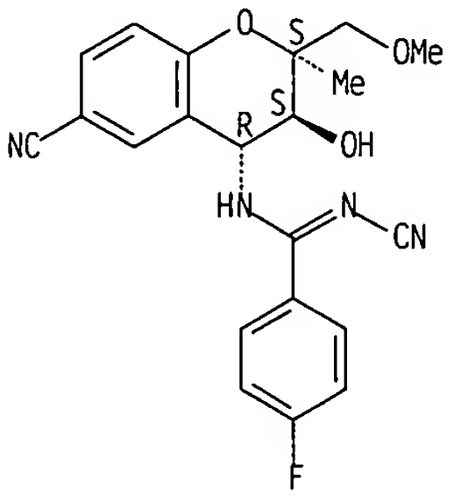
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



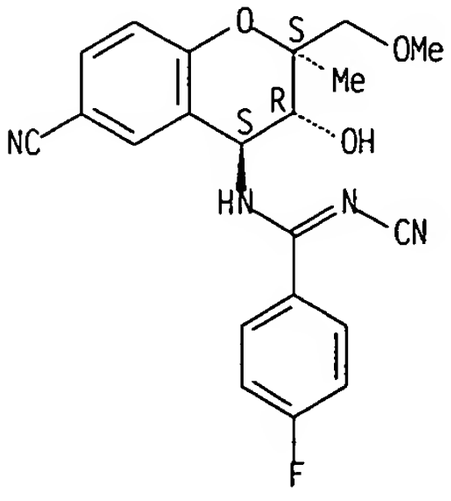
RN 168819-09-8 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2-(methoxymethyl)-2-methyl-2H-1-benzopyran-4-yl]-4-fluoro-, (2.alpha..3.alpha..4.beta.)- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 168819-10-1 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2-(methoxymethyl)-2-methyl-2H-1-benzopyran-4-yl]-4-fluoro-, (2.alpha.,3.beta..4.alpha.)- (9CI) (CA INDEX NAME)

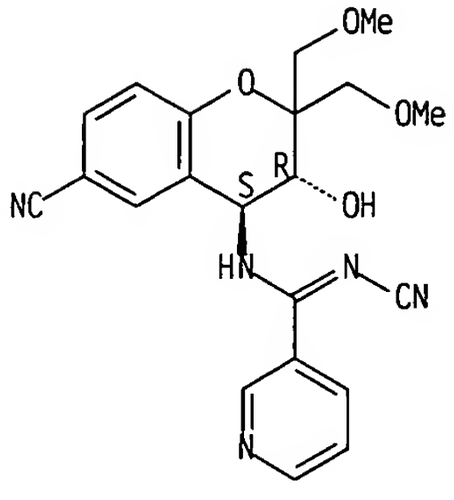
Relative stereochemistry.
Double bond geometry unknown.



RN 168819-16-7 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

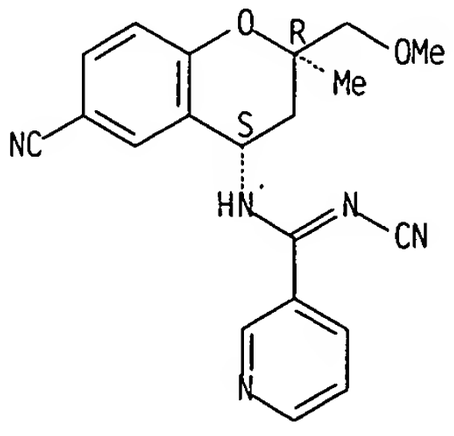
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



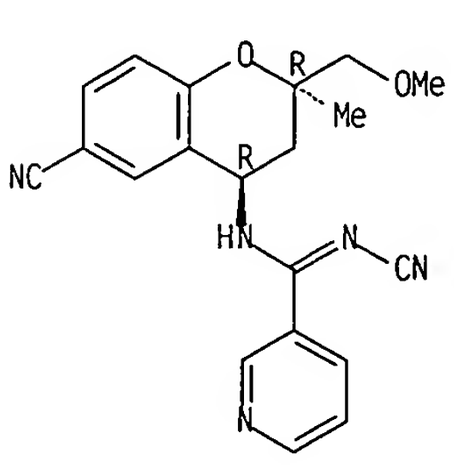
RN 168819-23-6 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-2-(methoxymethyl)-2-methyl-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 168819-24-7 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-2-(methoxymethyl)-2-methyl-2H-1-benzopyran-4-yl]-, cis- (9CI) (CA INDEX NAME)

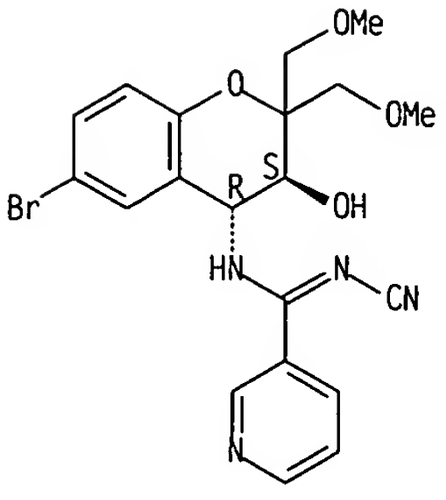
Relative stereochemistry.
Double bond geometry unknown.



RN 168819-30-5 HCAPLUS
CN 3-Pyridinecarboximidamide, N-[6-bromo-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-N'-cyano-, trans- (9CI) (CA INDEX NAME)

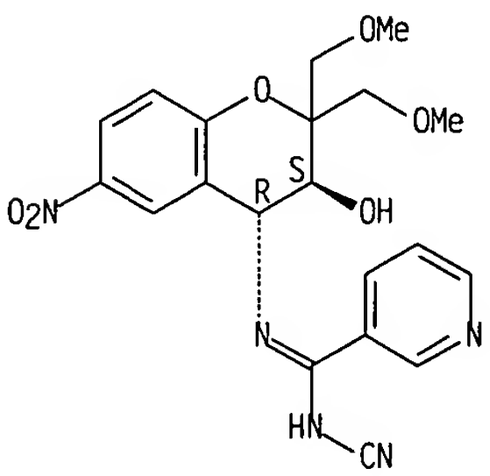
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



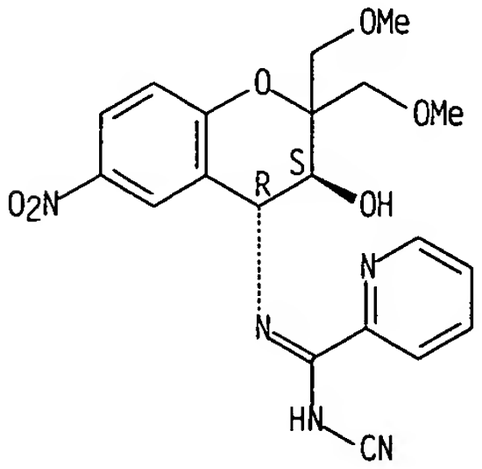
RN 168819-36-1 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-6-nitro-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



RN 168819-37-2 HCAPLUS
CN 2-Pyridinecarboximidamide, N-cyano-N'-[3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-6-nitro-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

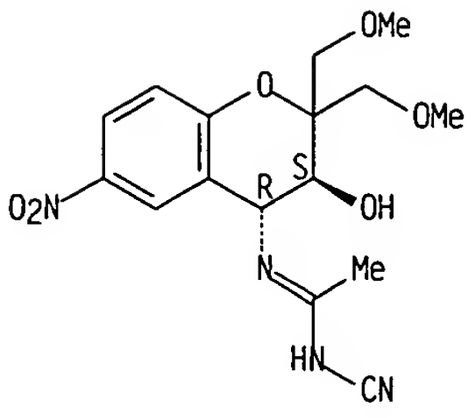
Absolute stereochemistry.
Double bond geometry unknown.



RN 168819-38-3 HCAPLUS
CN Ethanimidamide, N-cyano-N'-[3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-6-nitro-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

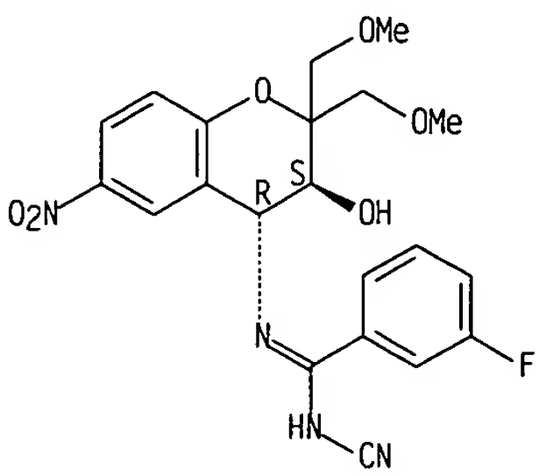
Absolute stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



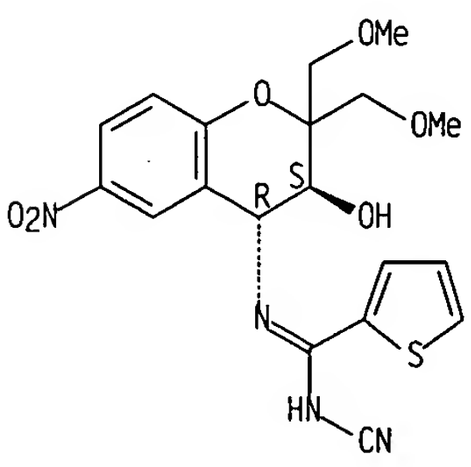
RN 168819-39-4 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-[3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-6-nitro-2H-1-benzopyran-4-yl]-3-fluoro-, (3S-trans)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



RN 168819-40-7 HCAPLUS
CN 2-Thiophenecarboximidamide, N-cyano-N'-[3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-6-nitro-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

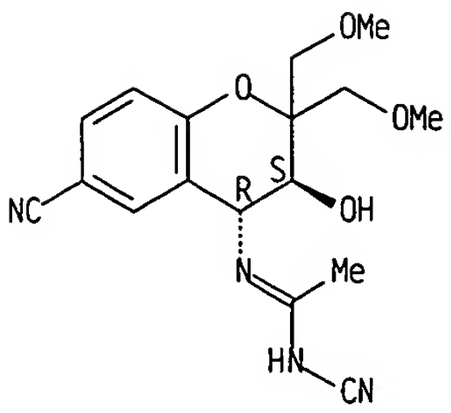
Absolute stereochemistry.
Double bond geometry unknown.



RN 168819-41-8 HCAPLUS
CN Ethanimidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

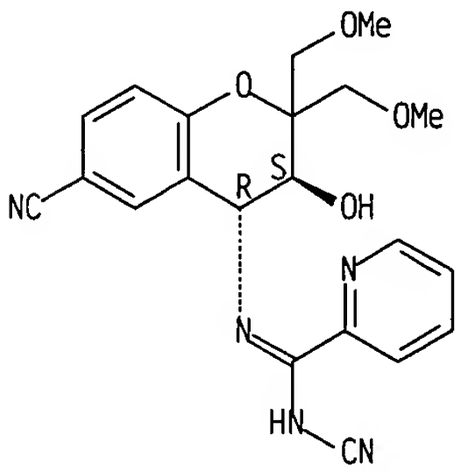
Absolute stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



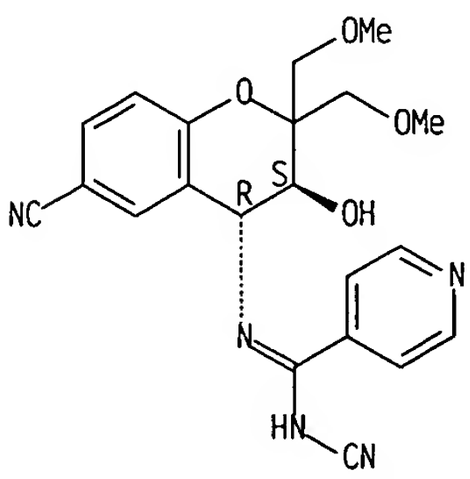
RN 168819-42-9 HCAPLUS
CN 2-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



RN 168819-43-0 HCAPLUS
CN 4-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

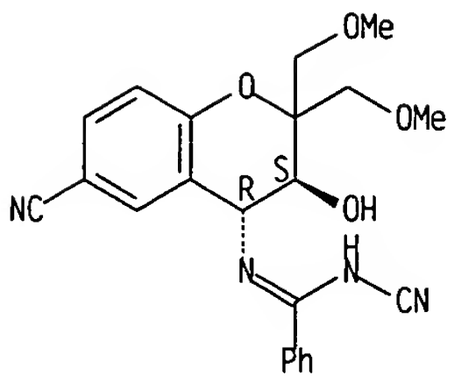
Absolute stereochemistry.
Double bond geometry unknown.



RN 168819-44-1 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

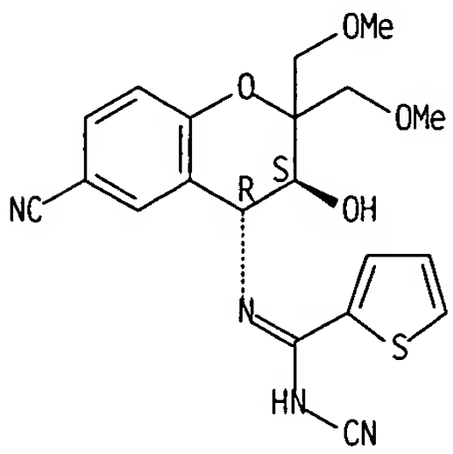
Absolute stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



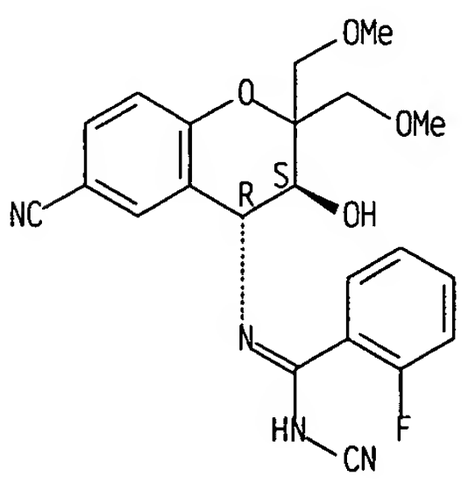
RN 168819-45-2 HCAPLUS
CN 2-Thiophenecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



RN 168819-46-3 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-2-fluoro-, (3S-trans)- (9CI) (CA INDEX NAME)

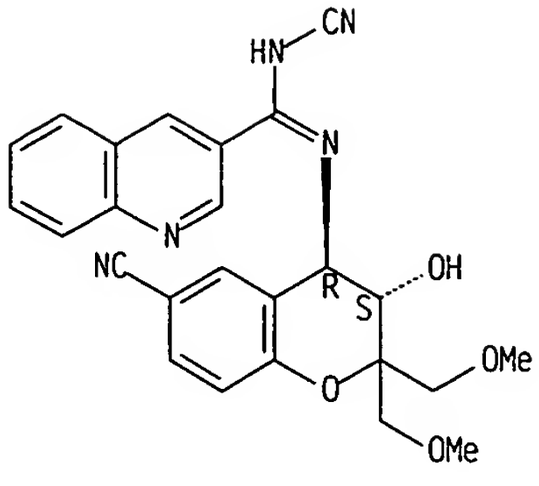
Absolute stereochemistry.
Double bond geometry unknown.



RN 168819-48-5 HCAPLUS
CN 3-Quinolinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

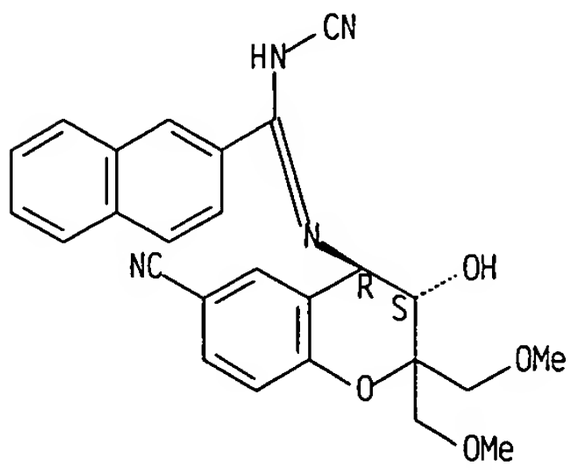
Absolute stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



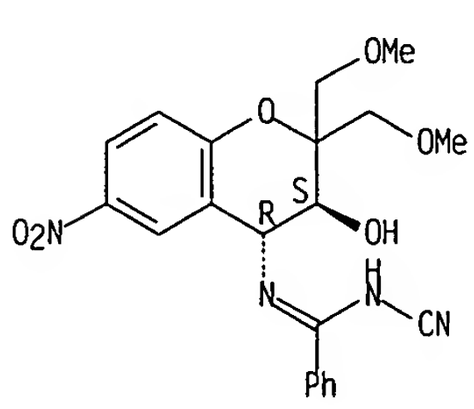
RN 168819-50-9 HCAPLUS
CN 2-Naphthalenecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



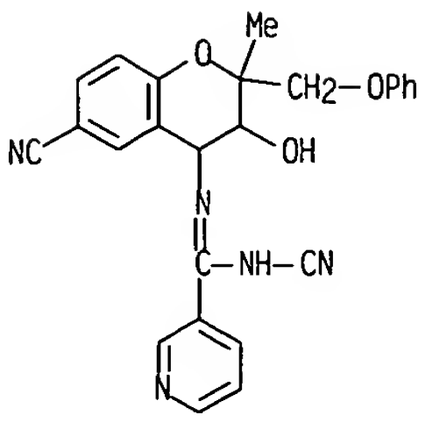
RN 168819-58-7 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-[3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-6-nitro-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



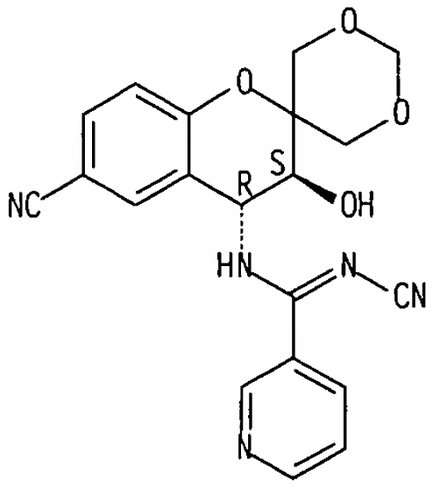
RN 168819-64-5 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2-methyl-2-(phenoxymethyl)-2H-1-benzopyran-4-yl]- (9CI) (CA INDEX NAME)

Search done by Noble Jarrell



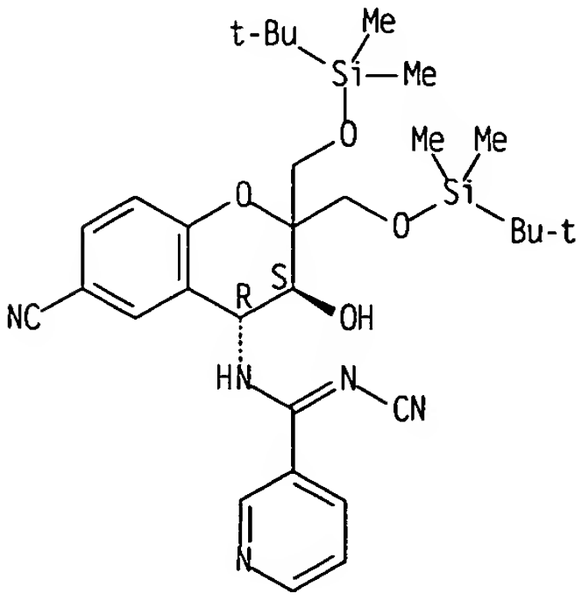
RN 168819-70-3 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxyspiro[2H-1-benzopyran-2,5'-[1,3]dioxan]-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 168819-73-6 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-2,2-bis[[[(1,1-dimethylethyl)dimethylsilyl]oxy]methyl]-3,4-dihydro-3-hydroxy-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.

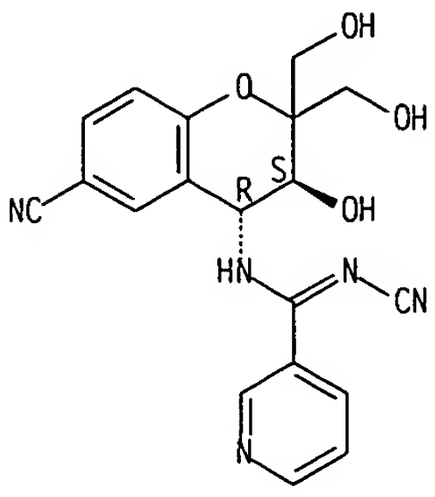


RN 168819-74-7 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(hydroxymethyl)-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.

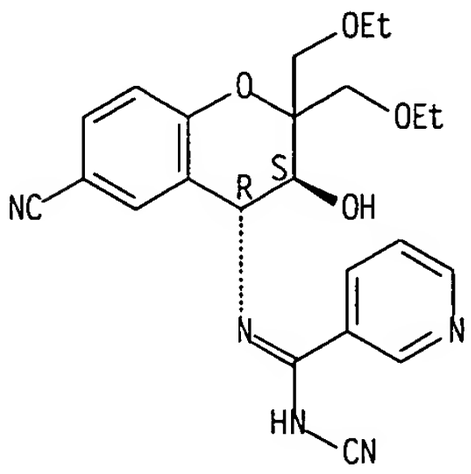
Search done by Noble Jarrell

Double bond geometry unknown.



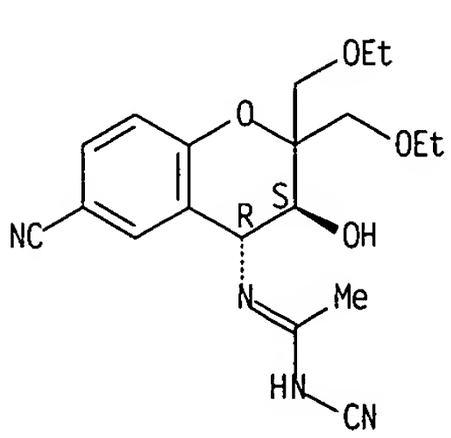
RN 168819-80-5 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-2,2-bis(ethoxymethyl)-3,4-dihydro-3-hydroxy-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



RN 168819-81-6 HCAPLUS
CN Ethanimidamide, N-cyano-N'-[6-cyano-2,2-bis(ethoxymethyl)-3,4-dihydro-3-hydroxy-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

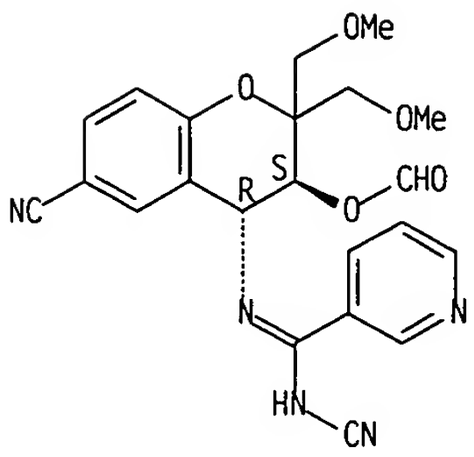
Absolute stereochemistry.
Double bond geometry unknown.



RN 168819-82-7 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3-(formyloxy)-3,4-dihydro-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

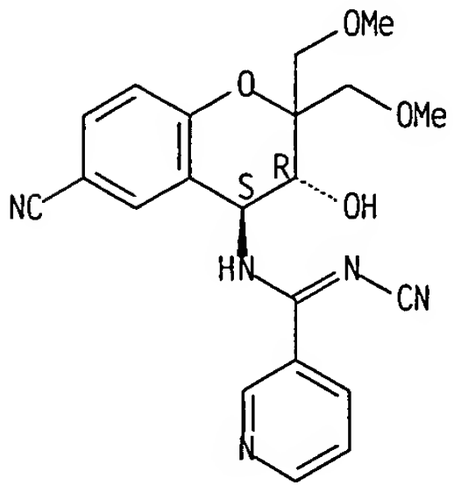
Absolute stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



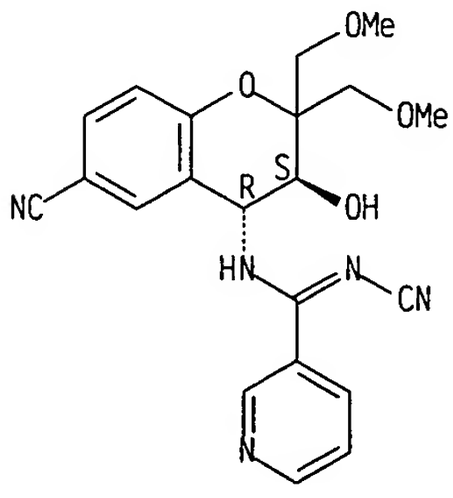
RN 169273-22-7 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3R-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



RN 169273-23-8 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-3-hydroxy-2,2-bis(methoxymethyl)-2H-1-benzopyran-4-yl]-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



L24 ANSWER 3 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1995:339492 HCAPLUS
DN 122:105674
ED Entered STN: 08 Feb 1995
TI Preparation of 4-[[heterocyclyl(cyanoimino)methyl]amino]benzopyran derivatives as antihypertensive agents and vasodilators

Search done by Noble Jarrell

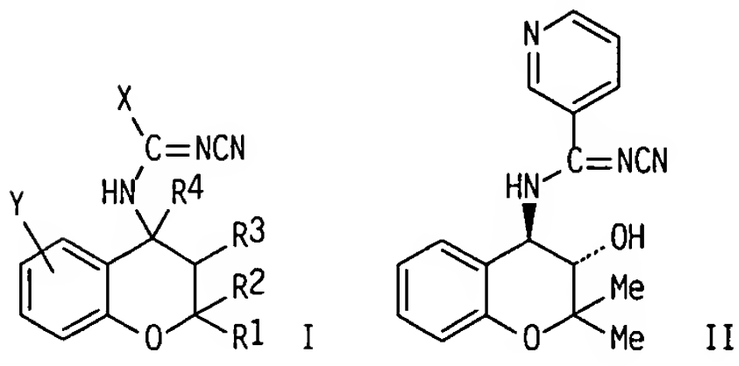
IN Nakajima, Tatsuo; Sakai, Teruyuki; Izawa, Toshio
PA Kirin Brewery, Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07D405-12
ICS A61K031-35; A61K031-38; A61K031-44; C07D407-12; C07D409-12
CC 27-14 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06298759	A2	19941025	JP 1993-93363	19930420 <--
PRAI	JP 1993-93363		19930420 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 06298759	ICM	C07D405-12
	ICS	A61K031-35; A61K031-38; A61K031-44; C07D407-12; C07D409-12

OS MARPAT 122:105674
GI



I

II

AB The title compds. [I; X = (un)substituted heteroaryl; Y = cyano, NO2, CF3, MeSO2; R1, R2 = lower alkyl; R3 = OZ, wherein Z = H, acyl, alkylsulfonyl, or arylsulfonyl; R4 = H or R4R3 forms a bond], having potent and long-lasting antihypertensive activity due to the activation of K+ channel, are prepared Thus, 3-cyanopyridine was treated with HCl(g) in propanol at 0-5.degree. to give crude Pr 3-pyridinecarboximidate which was cyanated with cyanamide in aqueous solution of NaH2PO4.2H2O and Na2HPO4 to give Pr N-cyano-3-pyridinecarboximidate. The latter compound was condensed with (+)-(3S,4R)-trans-4-amino-3,4-dihydro-2,2-dimethyl-3-hydroxy-2H-1-benzopyran-6-carbonitrile in MeOH to give title compound [(-)-(3S,4R)-trans-II]. II showed ED50 of 30.2 mg/kg peritoneally for reducing the blood pressure of spontaneously hypertensive rats and the hypertensive effect lasted for .gtoreq.24 h.

ST heterocyclylcyanoiminomethylaminobenzopyran prepn antihypertensive; vasodilator heterocyclylcyanoiminomethylaminobenzopyran; aminobenzopyran heterocyclylcyanoiminomethyl prepn antihypertensive; cyanoiminomethylaminobenzopyran heterocyclyl prepn antihypertensive

IT Antihypertensives
Vasodilators
(preparation of [[heterocyclyl(cyanoimino)methyl]amino]benzopyran derivs. as antihypertensive agents and vasodilators)

IT 143966-29-4P 143966-30-7P, 3-Pyridinecarboximidic acid, N-cyano, propyl ester **149278-54-6P** 160753-73-1P 160753-74-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

Search done by Noble Jarrell

(intermediate for preparation of [[heterocyclyl(cyanoimino)methyl]amino]benz
opyran derivs. as antihypertensive agents and vasodilators)

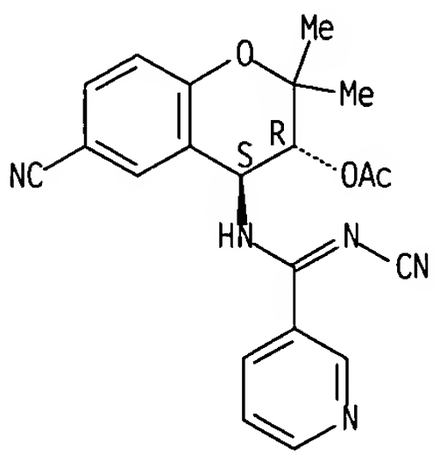
IT **149278-33-1P 149278-68-2P 149342-19-8P**
160753-70-8P 160753-71-9P 160753-72-0P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use);
BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of [[heterocyclyl(cyanoimino)methyl]amino]benzopyran derivs. as
antihypertensive agents and vasodilators)

IT 100-54-9, 3-Cyanopyridine 108-24-7, Acetic anhydride 420-04-2,
Cyanamide 86776-58-1 88653-55-8 102423-21-2, Methyl
N-cyano-2-furancarboximidate 118581-55-8 133300-52-4, Methyl
N-cyano-3-thiophenecarboximidate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction in preparation of [[heterocyclyl(cyanoimino)methyl]amino]benzopyra
n derivs. as antihypertensive agents and vasodilators)

IT **149278-54-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(intermediate for preparation of [[heterocyclyl(cyanoimino)methyl]amino]benz
opyran derivs. as antihypertensive agents and vasodilators)

RN 149278-54-6 HCAPLUS
CN 3-Pyridinecarboximidamide, N-[3-(acetyloxy)-6-cyano-3,4-dihydro-2,2-
dimethyl-2H-1-benzopyran-4-yl]-N'-cyano-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.

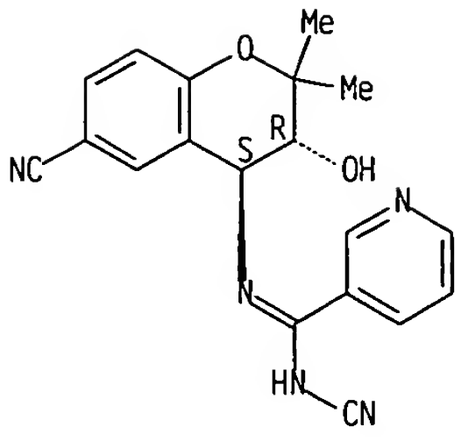


IT **149278-33-1P 149278-68-2P 149342-19-8P**
160753-70-8P 160753-71-9P 160753-72-0P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use);
BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of [[heterocyclyl(cyanoimino)methyl]amino]benzopyran derivs. as
antihypertensive agents and vasodilators)

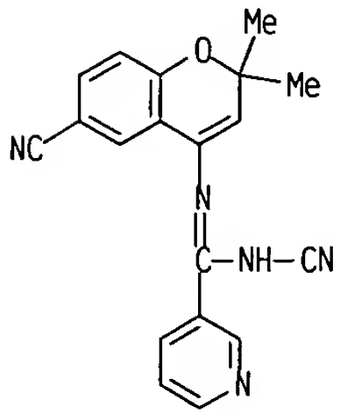
RN 149278-33-1 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-
dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell

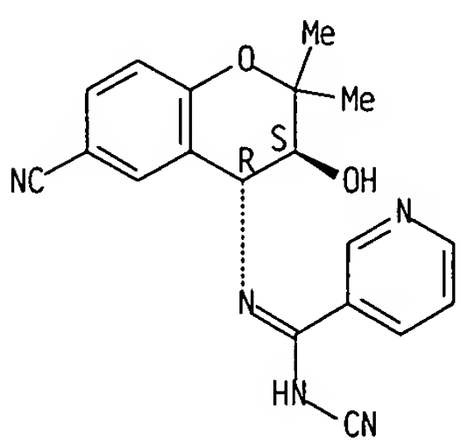


RN 149278-68-2 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)- (9CI) (CA INDEX NAME)



RN 149342-19-8 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, (3S-trans)- (9CI) (CA INDEX NAME)

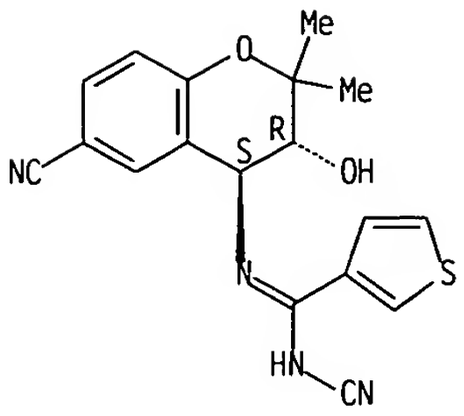
Absolute stereochemistry.
Double bond geometry unknown.



RN 160753-70-8 HCAPLUS
CN 3-Thiophenecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

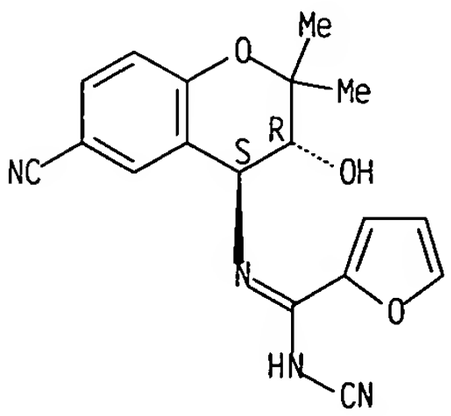
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



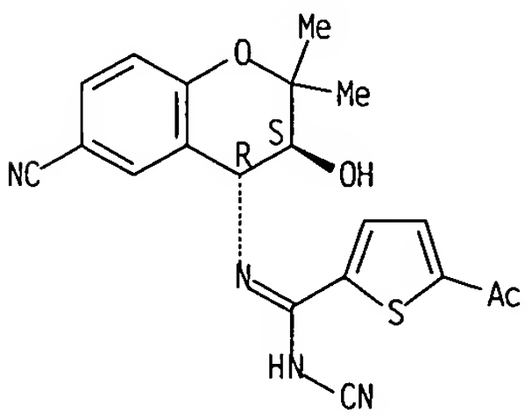
RN 160753-71-9 HCAPLUS
CN 2-Furancarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 160753-72-0 HCAPLUS
CN 2-Thiophenecarboximidamide, 5-acetyl-N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, (3S-trans)- (9CI) (CA INDEX NAME)

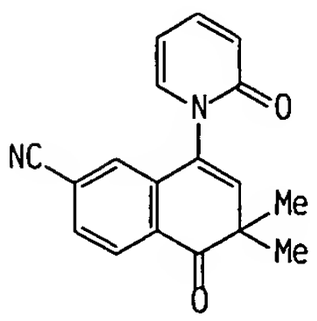
Absolute stereochemistry.
Double bond geometry unknown.



L24 ANSWER 4 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:560066 HCAPLUS
DN 119:160066
ED Entered STN: 16 Oct 1993
TI 2,2-Dialkylnaphthalen-1-ones as new potassium channel activators
AU Almansa, Carmen; Gomez, Luis A.; Cavalcanti, Fernando L.; Rodriguez, Ricardo; Carceller, Elena; Bartroli, Javier; Garcia-Rafanell, Julian; Forn, Javier
CS Res. Cent., J. Uriach y Cia.S.A., Barcelona, 08026, Spain
SO Journal of Medicinal Chemistry (**1993**), 36(15), 2121-33
CODEN: JMCMAR; ISSN: 0022-2623

Search done by Noble Jarrell

DT Journal
LA English
CC 27-17 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1, 25
GI



I

AB A new series of 2,2-dialkylnaphthalen-1-one potassium channel activators has been prepared, and their in vitro relaxant activities in isolated rat portal vein and guinea pig tracheal spirals as well as their oral antihypertensive effect in spontaneously hypertensive rats have been evaluated. The group of 1,2-dihydro-4-(1,2-dihydro-2-oxo-1-pyridyl)-2,2-dimethylnaphthalen-1-ones with an electron-withdrawing substituent at the 6-position contain the most active compds. and 1,2-dihydro-4-(1,2-dihydro-2-oxo-1-pyridyl)-2,2-dimethyl-1-oxonaphthalene-6-carbonitrile, (UR-8225) (I), has been selected for further pharmacol. development.

ST dialkylnaphthalenone prepn potassium channel activator; naphthalenone dialkyl prepn potassium channel activator; antihypertensive dialkylnaphthalenone prepn; structure activity relationship dialkylnaphthalenone antihypertensive

IT Antihypertensives
Bronchodilators
(dialkylnaphthalenones)

IT Molecular structure-biological activity relationship
(antihypertensive, of dialkylnaphthalenones)

IT Ion channel openers
(potassium, dialkylnaphthalenones)

IT 4635-59-0, 4-Chlorobutyryl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with aminotetrahydronaphthalenone derivative)

IT 703-67-3 1078-19-9 25095-57-2 26673-31-4 32281-97-3 62620-71-7 66361-67-9 90401-84-6 149456-02-0 149915-80-0 149915-81-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(methylation of)

IT 149456-22-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and bromination of)

IT 149455-39-0P 149455-77-6P 149455-81-2P 149455-86-7P 149455-90-3P 149455-94-7P 149455-99-2P 149456-05-3P 149456-10-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclization of, with chlorobutyryl chloride)

IT 21568-65-0P 148925-37-5P 149455-83-4P 149455-88-9P 149455-92-5P 149455-96-9P 149456-01-9P 149456-07-5P 149456-12-2P 149456-15-5P 149456-18-8P 149456-23-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and dehydrogenation of)

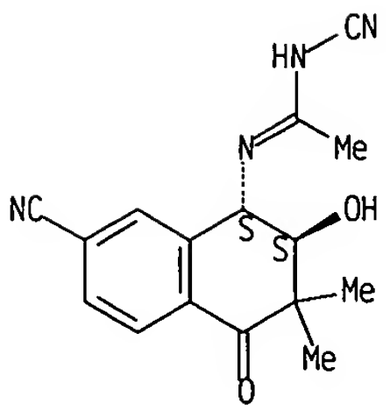
IT 148925-38-6P 149455-79-8P 149455-84-5P 149455-89-0P 149455-93-6P 149455-97-0P 149456-03-1P 149456-08-6P 149456-13-3P 149456-16-6P 149456-19-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

Search done by Noble Jarrell

(Reactant or reagent)
(preparation and epoxidn. of)
IT 149915-77-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)
IT 149455-91-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and intramol. cyclization of)
IT 155267-76-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and methylation or acetylation of)
IT 94535-50-9P 148925-41-1P 148925-42-2P 148925-46-6P 148925-49-9P
148925-52-4P 148925-53-5P 148925-54-6P 148925-55-7P 148925-60-4P
148925-61-5P 148925-62-6P 148925-64-8P **148925-65-9P**
149455-11-8P 149455-13-0P 149455-15-2P 149455-16-3P 149455-18-5P
149455-19-6P 149455-21-0P 149455-23-2P 149455-24-3P 149455-25-4P
149455-26-5P 149455-28-7P 149455-31-2P 149455-32-3P 149455-33-4P
149455-34-5P 149455-35-6P 149455-36-7P 149455-38-9P 149455-40-3P
149455-41-4P 149455-42-5P 149455-43-6P 149455-44-7P 149455-46-9P
149455-48-1P 149455-50-5P 149455-51-6P 149455-52-7P 149455-53-8P
149455-54-9P 149455-55-0P 149455-56-1P 149455-57-2P 149455-59-4P
149455-60-7P 149455-61-8P 149455-62-9P 149455-64-1P 149455-65-2P
149455-66-3P 149455-67-4P 149455-68-5P 149455-69-6P 149455-70-9P
149455-72-1P 149455-74-3P 149455-75-4P 149456-21-3P 149915-48-0P
149915-49-1P 149915-50-4P 149915-51-5P 149915-53-7P 149915-54-8P
149915-55-9P 149915-59-3P 149915-60-6P 149915-61-7P 149915-65-1P
149915-66-2P 149915-71-9P 149915-75-3P 149915-76-4P 155267-80-4P
155267-81-5P 155267-82-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and potassium channel activator activity of)
IT 148925-39-7P 148925-40-0P 148925-50-2P 149455-76-5P 149455-80-1P
149455-85-6P 149455-98-1P 149456-04-2P 149456-09-7P 149456-14-4P
149456-17-7P 149456-20-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with amines)
IT 149455-30-1P 149915-78-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 142-08-5, 2-Hydroxypyridine 18292-04-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with bromoepoxytetrahydronaphthalenone derivative)
IT **148925-65-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and potassium channel activator activity of)
RN 148925-65-9 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(7-cyano-1,2,3,4-tetrahydro-2-hydroxy-3,3-dimethyl-4-oxo-1-naphthalenyl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



L24 ANSWER 5 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:539100 HCAPLUS
DN 119:139100
ED Entered STN: 02 Oct 1993
TI Preparation of benzopyran derivatives as antihypertensives and vasodilators.
IN Katoh, Susumu; Sayama, Shinsuke; Shibata, Saizo; Uchida, Itsuo
PA Japan Tobacco Inc., Japan
SO PCT Int. Appl., 91 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM C07D311-68
ICS C07D405-12; C07D409-12
ICA A61K031-35
ICI C07D405-12, C07D213-00, C07D311-00; C07D409-12, C07D311-00, C07D333-00
CC 27-14 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 1

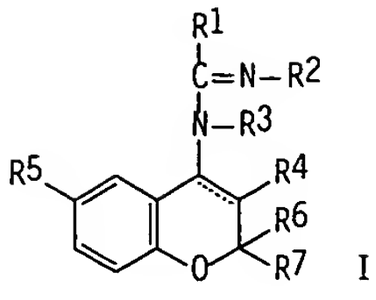
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9219611	A1	19921112	WO 1992-JP538	19920424 <--
	W: CA, HU, KR, RU, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
	JP 05186458	A2	19930727	JP 1992-137484	19920415 <--
	CA 2086322	AA	19921027	CA 1992-2086322	19920424 <--
	EP 536424	A1	19930414	EP 1992-909551	19920424 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, SE				
	HU 63403	A2	19930830	HU 1993-203	19920424 <--
PRAI	JP 1991-188374	A	19910426 <--		
	JP 1991-279014	A	19910730 <--		
	JP 1992-137484	A	19920415 <--		
	WO 1992-JP538	W	19920424 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9219611	ICM	C07D311-68
	ICS	C07D405-12; C07D409-12
	ICA	A61K031-35
	ICI	C07D405-12, C07D213-00, C07D311-00; C07D409-12, C07D311-00, C07D333-00

OS MARPAT 119:139100
GI

Search done by Noble Jarrell



I

AB The title compds. [I; R1 = halo, NO2, alkoxycarbonyl, (un)substituted alkyl; R2 = OH, alkoxy, cyano, NO2, etc.; R3 = H, alkyl; R4 = H, OH, nitrooxy, Ac; R5 = alkyl, (un)substituted alkoxy, cyano, NO2, acyl, halo; R6, R7 = alkyl, or R6R7 = alkylene] and their pharmaceutically acceptable salts are prepared Me N-[trans-3-(tert-butyldimethylsilyloxy)-6-cyano-3,4-dihydro-2,2-dimethyl-2H-1-benzopyran-4-yl]-3-pyridinethiocarboximidate (preparation given) in diglyme was treated with cyanamide at 80.degree. to give N-[trans-3-(tert-butyldimethylsilyloxy)-6-cyano-3,4-dihydro-2,2-dimethyl-2H-1-benzopyran-4-yl]-N'-cyano-3-pyridinethiocarboxamidine, which was treated with Bu4NF at room temperature for 4 days to give I [R1 = 3-pyridyl, R2 = R5 = cyano, R3 = H, R4 = OH, R6 = R7 = Me], which had an IC50 of 0.6 .mu.M as a vasodilator in an in vitro study.

ST benzopyran deriv prepn antihypertensive vasodilator; antihypertensive benzopyran deriv prepn

IT Antihypertensives
Vasodilators
(benzopyran derivs.)

IT 149278-31-9P 149278-32-0P **149278-33-1P** 149278-34-2P
149278-35-3P **149278-36-4P** 149278-37-5P 149278-38-6P
149278-39-7P **149278-40-0P** 149278-41-1P 149278-42-2P
149278-43-3P 149278-44-4P **149278-45-5P** **149278-46-6P**
149278-47-7P 149278-48-8P 149278-49-9P 149278-50-2P
149278-51-3P 149278-52-4P 149278-53-5P **149278-54-6P**
149278-55-7P **149278-56-8P** **149278-57-9P**
149278-58-0P **149278-59-1P** **149278-60-4P**
149278-61-5P **149278-62-6P** **149278-63-7P**
149278-64-8P **149278-65-9P** **149278-66-0P**
149278-67-1P **149278-68-2P** **149278-69-3P**
149278-70-6P **149342-19-8P** **149342-20-1P**
149342-21-2P **149342-22-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as antihypertensive and vasodilator)

IT 31084-70-5P 149278-71-7P 149278-72-8P 149278-73-9P 149278-74-0P
149278-75-1P 149278-76-2P 149278-77-3P 149278-78-4P
149278-79-5P 149278-80-8P 149278-81-9P 149278-82-0P
149278-83-1P 149278-84-2P 149278-85-3P 149278-86-4P 149278-87-5P
149278-88-6P 149278-89-7P 149278-90-0P 149278-91-1P
149278-92-2P 149278-93-3P 149278-94-4P 149278-95-5P 149278-96-6P
149278-97-7P 149278-98-8P 149857-13-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediate for antihypertensives and vasodilators)

IT 67-62-9, O-Methylhydroxylamine 74-88-4, Methyl iodide, reactions
108-48-5, 2,6-Lutidine 420-04-2, Cyanamide 541-41-3, Ethyl chloroformate 831-68-5, Ethyl 4-nitrobenzimidate 7803-49-8, Hydroxylamine, reactions 10400-19-8, 3-Pyridinecarbonyl chloride
18162-48-6, tert-Butyldimethylsilyl chloride 19547-38-7, Methyl 2-pyridinecarboximidate 19847-10-0, Pyrazinecarbonyl chloride
52162-47-7 86776-58-1 86823-96-3 89316-86-9 95460-34-7
99498-54-1 107326-06-7, Methyl N-cyano-2-thiophenecarboximidate
118581-55-8 121021-87-2 124787-48-0 127419-05-0 129462-75-5
133178-68-4 133300-43-3 133415-43-7 149278-99-9 149279-00-5
149279-01-6 149279-02-7 149279-03-8 149279-04-9 149279-05-0
149279-06-1 149279-07-2 149279-08-3 149279-09-4 149279-10-7

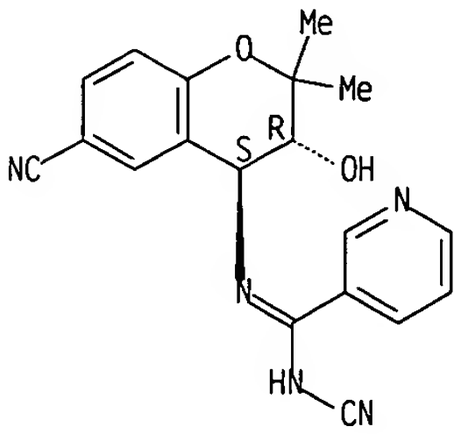
Search done by Noble Jarrell

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of antihypertensives and vasodilators)

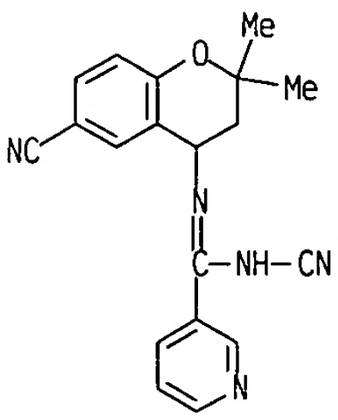
IT **149278-33-1P 149278-36-4P 149278-39-7P**
149278-40-0P 149278-45-5P 149278-46-6P
149278-51-3P 149278-54-6P 149278-55-7P
149278-56-8P 149278-57-9P 149278-58-0P
149278-59-1P 149278-60-4P 149278-61-5P
149278-62-6P 149278-63-7P 149278-64-8P
149278-65-9P 149278-66-0P 149278-67-1P
149278-68-2P 149278-69-3P 149278-70-6P
149342-19-8P 149342-20-1P 149342-21-2P
149342-22-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as antihypertensive and vasodilator)

RN 149278-33-1 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



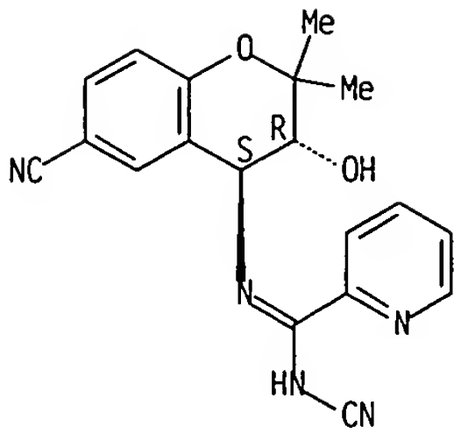
RN 149278-36-4 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-2,2-dimethyl-2H-1-benzopyran-4-yl)- (9CI) (CA INDEX NAME)



RN 149278-39-7 HCAPLUS
CN 2-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

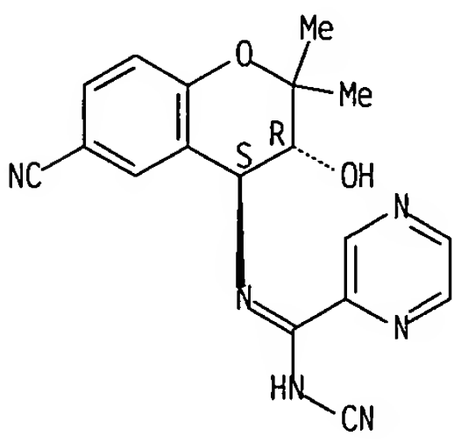
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



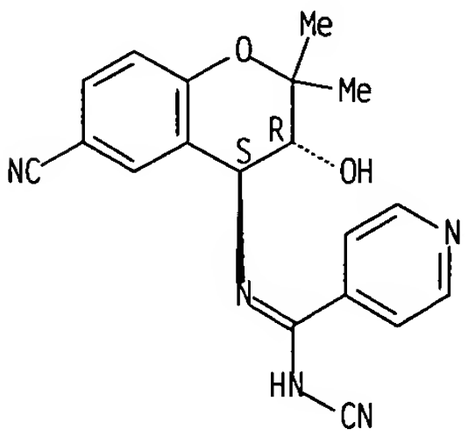
RN 149278-40-0 HCAPLUS
CN Pyrazinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 149278-45-5 HCAPLUS
CN 4-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

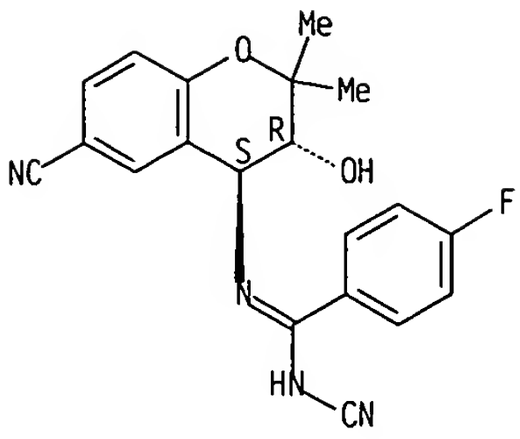
Relative stereochemistry.
Double bond geometry unknown.



RN 149278-46-6 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-4-fluoro-, trans- (9CI) (CA INDEX NAME)

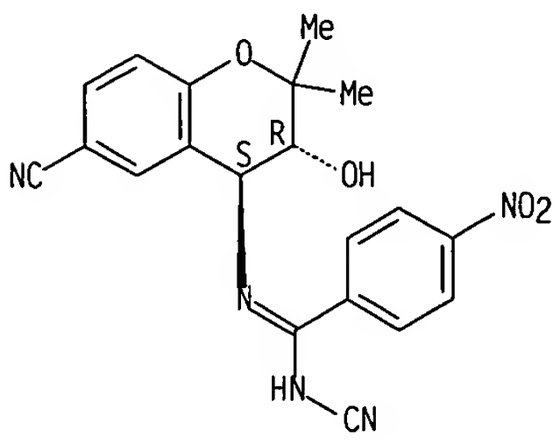
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



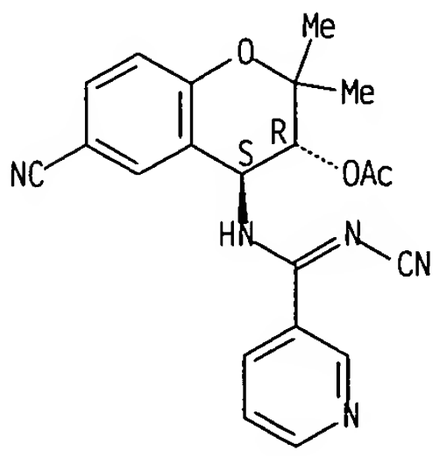
RN 149278-51-3 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-4-nitro-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 149278-54-6 HCAPLUS
CN 3-Pyridinecarboximidamide, N-[3-(acetyloxy)-6-cyano-3,4-dihydro-2,2-dimethyl-2H-1-benzopyran-4-yl]-N'-cyano-, trans- (9CI) (CA INDEX NAME)

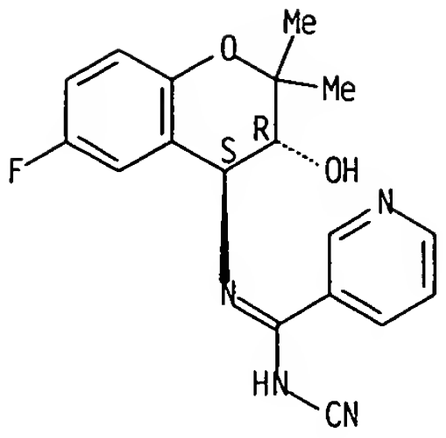
Relative stereochemistry.
Double bond geometry unknown.



RN 149278-55-7 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-fluoro-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

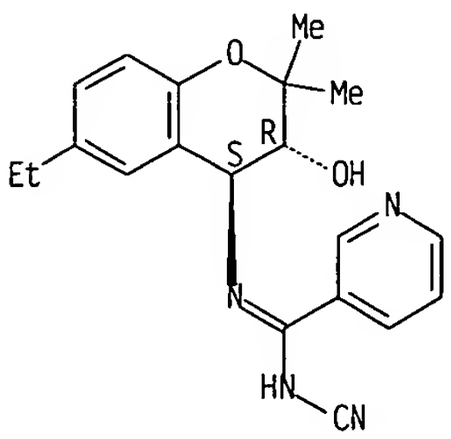
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



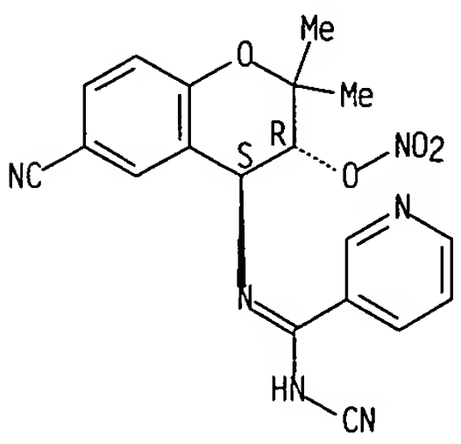
RN 149278-56-8 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-ethyl-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 149278-57-9 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-2,2-dimethyl-3-(nitrooxy)-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

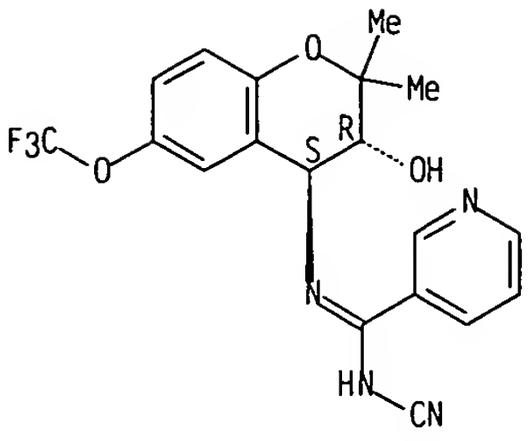
Relative stereochemistry.
Double bond geometry unknown.



RN 149278-58-0 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[3,4-dihydro-3-hydroxy-2,2-dimethyl-6-(trifluoromethoxy)-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

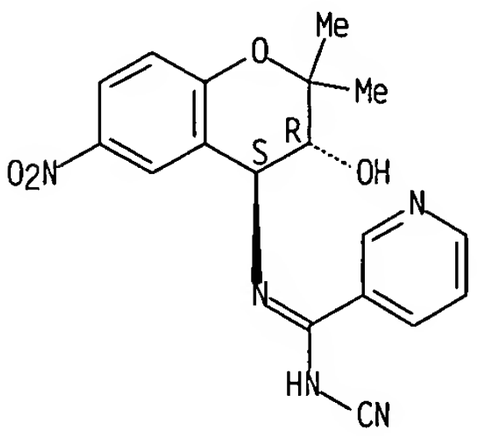
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



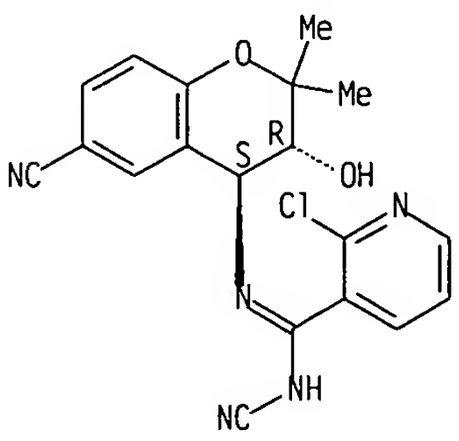
RN 149278-59-1 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 149278-60-4 HCAPLUS
CN 3-Pyridinecarboximidamide, 2-chloro-N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

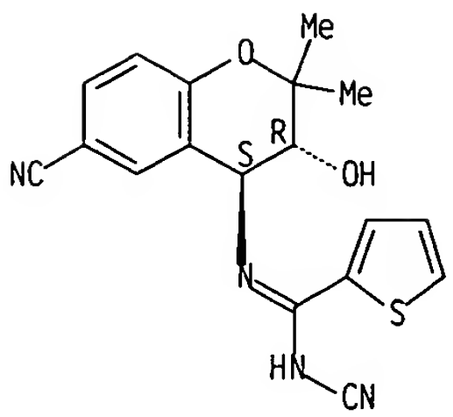
Relative stereochemistry.
Double bond geometry unknown.



RN 149278-61-5 HCAPLUS
CN 2-Thiophenecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

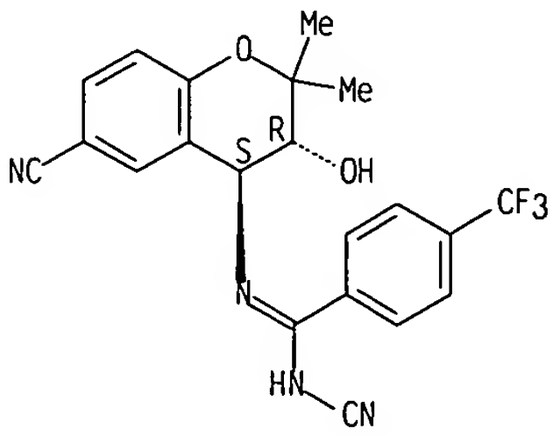
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



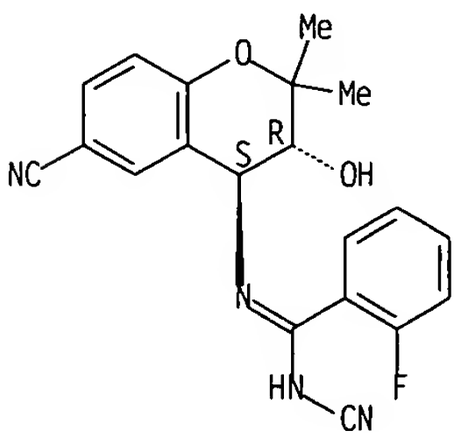
RN 149278-62-6 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-4-(trifluoromethyl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 149278-63-7 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-2-fluoro-, trans- (9CI) (CA INDEX NAME)

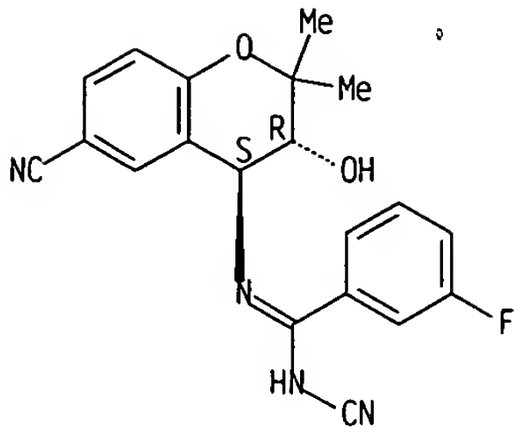
Relative stereochemistry.
Double bond geometry unknown.



RN 149278-64-8 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-3-fluoro-, trans- (9CI) (CA INDEX NAME)

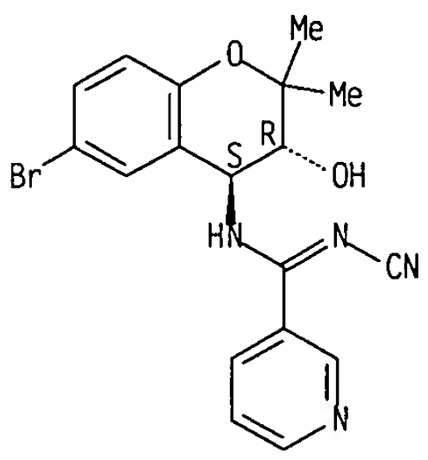
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



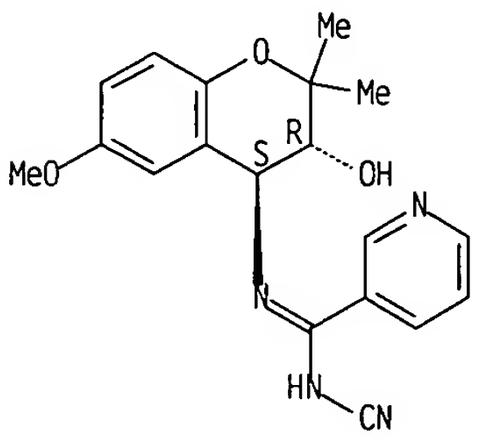
RN 149278-65-9 HCAPLUS
CN 3-Pyridinecarboximidamide, N-(6-bromo-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-N'-cyano-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 149278-66-0 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-6-methoxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

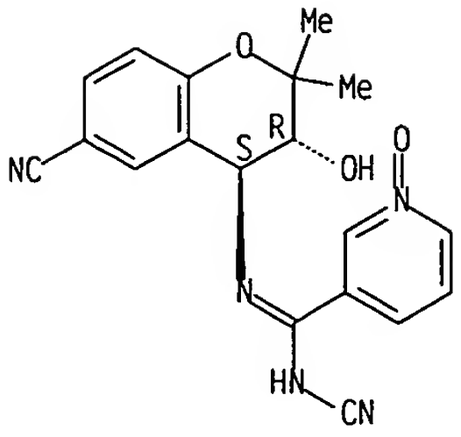
Relative stereochemistry.
Double bond geometry unknown.



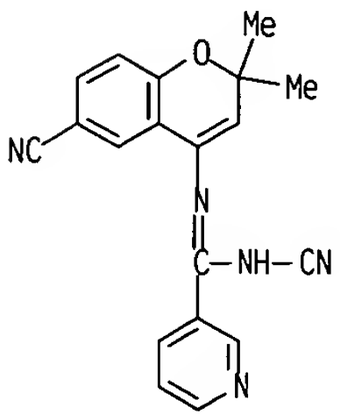
RN 149278-67-1 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, 1-oxide, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell

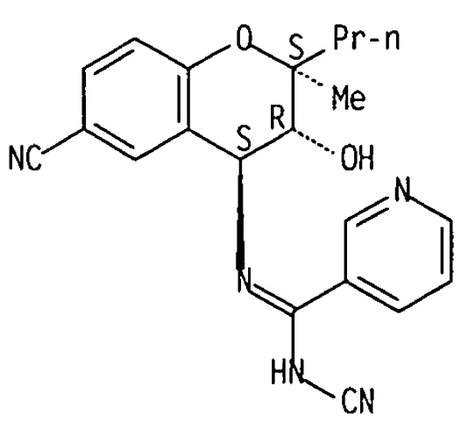


RN 149278-68-2 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)- (9CI) (CA INDEX NAME)



RN 149278-69-3 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2-methyl-2-propyl-2H-1-benzopyran-4-yl)-, (2.alpha.,3.beta.,4.alpha.)- (9CI) (CA INDEX NAME)

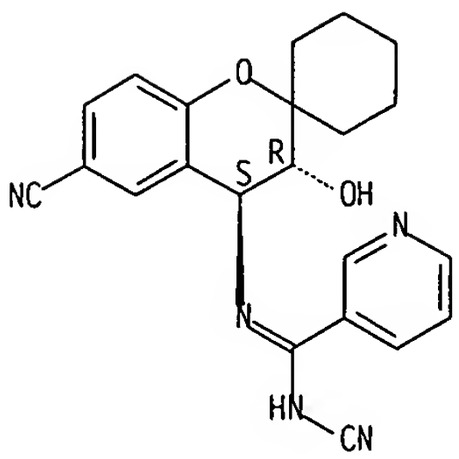
Relative stereochemistry.
Double bond geometry unknown.



RN 149278-70-6 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxyspiro[2H-1-benzopyran-2,1'-cyclohexan]-4-yl)-, trans- (9CI) (CA INDEX NAME)

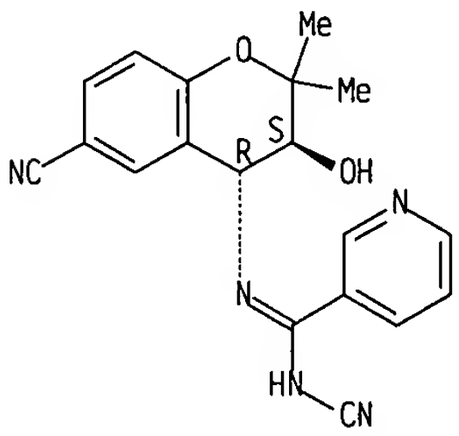
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



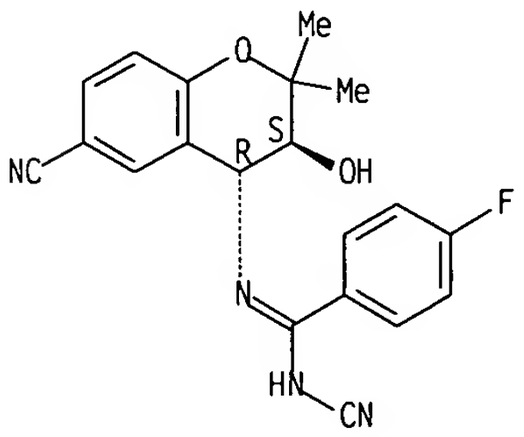
RN 149342-19-8 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, (3S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



RN 149342-20-1 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-4-fluoro-, (3S-trans)- (9CI) (CA INDEX NAME)

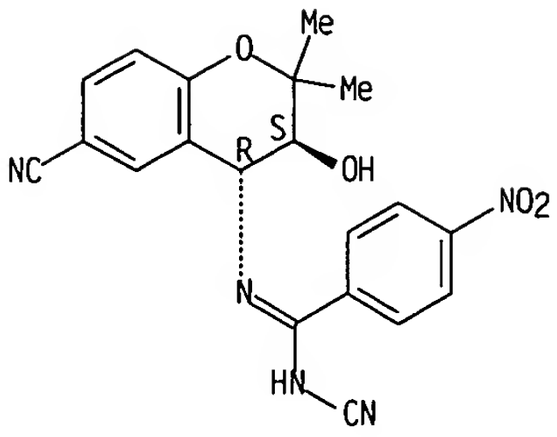
Absolute stereochemistry.
Double bond geometry unknown.



RN 149342-21-2 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-4-nitro-, (3S-trans)- (9CI) (CA INDEX NAME)

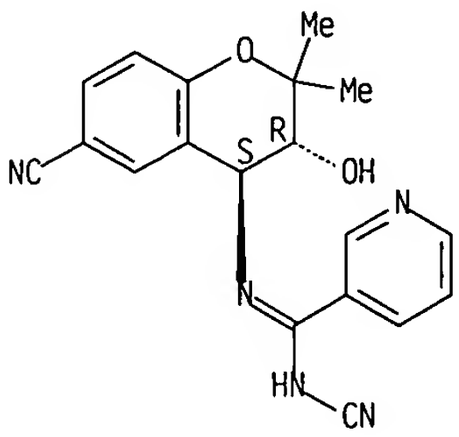
Absolute stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



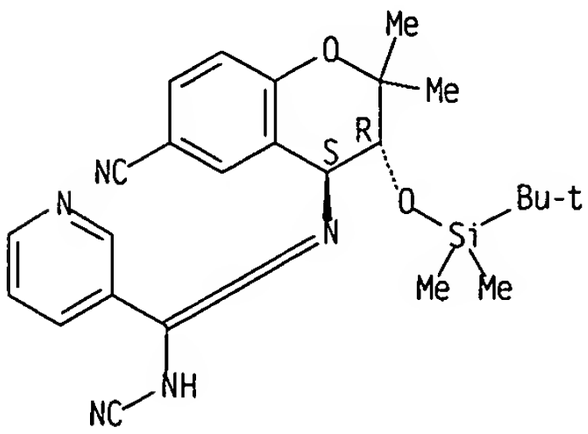
RN 149342-22-3 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, (3R-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



IT **149278-79-5P 149278-88-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediate for antihypertensives and vasodilators)
RN 149278-79-5 HCAPLUS
CN 3-Pyridinecarboximidamide, N-cyano-N'-[6-cyano-3-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-3,4-dihydro-2,2-dimethyl-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

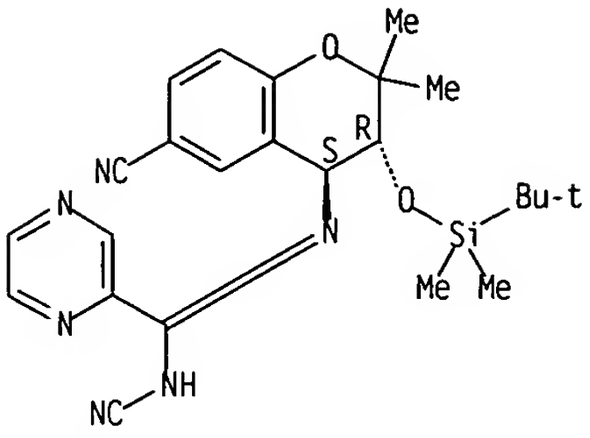
Relative stereochemistry.
Double bond geometry unknown.



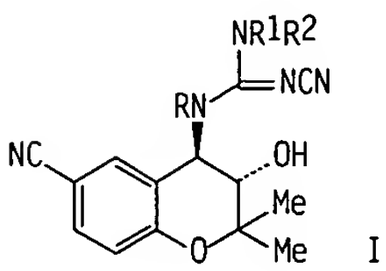
RN 149278-88-6 HCAPLUS
CN Pyrazinecarboximidamide, N-cyano-N'-[6-cyano-3-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-3,4-dihydro-2,2-dimethyl-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



L24 ANSWER 6 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:539019 HCAPLUS
DN 119:139019
ED Entered STN: 02 Oct 1993
TI Benzopyranylcyanoguanidine potassium channel openers
AU Atwal, Karnail S.; Moreland, Suzanne; McCullough, John R.; Ahmed, Syed Z.; Normandin, Diane E.
CS Bristol-Myers Squibb Pharm. Res. Inst., Princeton, NJ, 08543-4000, USA
SO Bioorganic & Medicinal Chemistry Letters (**1992**), 2(1), 87-90
CODEN: BMCLE8; ISSN: 0960-894X
DT Journal
LA English
CC 27-14 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1
GI



I

AB To further investigate whether the K channel openers cromakalim and pinacidil share common pharmacophoric features, the cromakalim analogs I [RR1 = CH2CH2, (CH2)3, R2 = H; R = R2 = H, R1 = H, Me, Et, CHMe2, CMe2Et, CH2CH2NMe2, CH2CH2OMe; R = H, NR1R2 = NMe2, pyrrolidino, N-benzylpiperazino] were prepared The potent vasodilating activity displayed by I, especially I (R = H, NR1R2 = pyrrolidino), supports the hypothesis of shared pharmacophoric features.
ST pharmacophore cromakalim pinacidil; benzopyranylcyanoguanidine potassium channel opener; cyanoguanidine benzopyranyl potassium channel opener; antihypertensive benzopyranylcyanoguanidine; vasodilator benzopyranylcyanoguanidine
IT Antihypertensives
Vasodilators
(benzopyranylcyanoguanidines)
IT Pharmacophores
(shared pharmacophoric features in cromakalim and pinacidil)
IT Ion channel openers
(potassium, benzopyranylcyanoguanidines)
IT 129462-66-4P 130228-87-4P 134017-89-3P 134017-94-0P 134017-95-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(intermediate in preparation of benzopyranylcyanoguanidine potassium channel openers)
IT 60560-33-0DP, Pinacidil, benzopyran analogs 94470-67-4DP, Cromakalim, cyanoguanidine analogs 127249-54-1P 127249-61-0P 127249-68-7P

Search done by Noble Jarrell

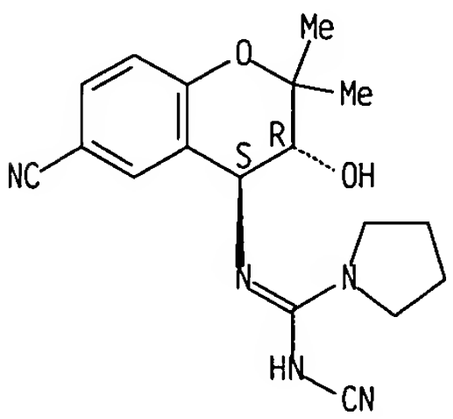
127249-69-8P 127249-70-1P 127249-71-2P **127249-72-3P**
127249-80-3P 134017-78-0P 134017-81-5P **134017-82-6P**
134017-84-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and vasodilator activity)

IT 107-15-3P, Ethylenediamine, reactions 109-76-2P, 1,3-Propanediamine
10191-60-3P, Dimethyl cyanoiminodithiocarbonate 65018-90-8P
86776-58-1P 127749-52-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(reactant in preparation of benzopyranylcyanoguanidine potassium channel openers)

IT **127249-72-3P 134017-82-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and vasodilator activity)

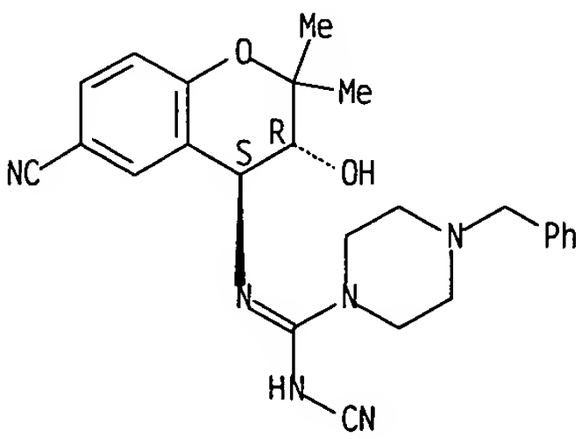
RN 127249-72-3 HCAPLUS
CN 1-Pyrrolidinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 134017-82-6 HCAPLUS
CN 1-Piperazinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-4-(phenylmethyl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



L24 ANSWER 7 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:495539 HCAPLUS
DN 119:95539
ED Entered STN: 04 Sep 1993
TI Heterocyclyl group-substituted tetralones having antihypertensive and bronochodilating activity
IN Almansa, Carmen; Gonzalez, M. Concepcion; Torres, M. Carmen; Carceller, Elena; Bartroli, Javier
PA Uriach, J., e Cia. S.A., Spain
SO Eur. Pat. Appl., 39 pp.

Search done by Noble Jarrell

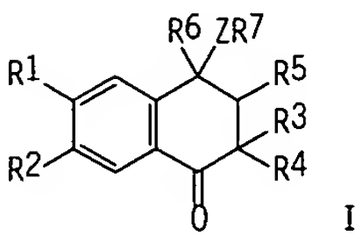
CODEN: EPXXDW
DT Patent
LA English
IC ICM C07D237-16
ICS C07D239-42; C07C255-56; C07C255-60; C07D213-64; C07D213-81; C07D307-68; A61K031-395
CC 28-15 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 525768	A1	19930203	EP 1992-113007	19920730 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, PT, SE				
ES 2033581	A1	19930316	ES 1991-1777	19910730 <--
ES 2033581	B1	19931216		
ES 2041212	A1	19931101	ES 1992-333	19920217 <--
ES 2041212	B1	19940516		
CA 2074864	AA	19930131	CA 1992-2074864	19920729 <--
PRAI ES 1991-1777	A	19910730 <--		
ES 1992-333	A	19920217 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 525768	ICM	C07D237-16
	ICS	C07D239-42; C07C255-56; C07C255-60; C07D213-64; C07D213-81; C07D307-68; A61K031-395

OS MARPAT 119:95539
GI



I

AB The title compds. I [R1, R2 = H, OH, CHO, CO2H, NO2, NH2CN, halogen, OCF3, alkoxy, C.tplbond.CH, (un)substituted alkylcarbonyl, arylsulfinyl, alkylsulfinyl, arylsulfenyl, alkyl, alkylsulfonylamino, aminosulfinyl, aminosulfonyl, etc.; R3 = H, alkyl; R4 = alkyl; R5 = OH, acetoxy, formyloxy; R6 = H, olefinic bond with R5; Z = O, NR8; R3R4 = C2-5 methylene chain; if Z = O, then R7 = R9 where R9 = C3-6 cycloalkyl, C3-6 cycloalkenyl, Ph, heteroaryl (all optionally substituted by 1-2 halogen atoms and/or 1-2 C1-6 alkyl, C1-6 alkoxy, arylmethyloxy, etc., but when Z = NR8, then R7 = R9, C(:X)R10; R10 = H, (un)substituted C1-6 alkyl, C2-6 alkenyl, C3-6 cycloalkyl, (un)substituted Ph, (un)substituted heteroaryl; X = O, S, NCN], useful as antihypertensive and bronchodilating agents, are prepared Thus, 3,4-epoxy-2,2-dimethyl-1-oxo-1,2,3,4-tetrahydronaphthalene-6-carbonitrile reacted with 3,6-dihydroxypyridazine to give trans-2,2-dimethyl-3-hydroxy-4-(6-hydroxy-3-pyridazinyloxy)-1-oxo-1,2,3,4-tetrahydrononaphthalene-6-carbonitrile (II) in 65% yield. In spontaneously hypertensive rats at 1 mg/kg, II lowered arterial blood pressure 116 mm Hg, and at 8.8 .mu.M inhibited 50% noradrenaline-induced contraction in portal vein isolated from rat.
ST antihypertensive tetralone prepn; bronchodilation tetralone prepn; hypertension treatment tetralone drug; asthma treatment tetralone drug; pyridazinyloxytetralone antihypertensive agent; pyridazinyloxytetrahydronaphthalenecarbonitrile bronchodilating agent
IT Antihypertensives
Bronchodilators
(heterocyclyl-substituted tetralones)

Search done by Noble Jarrell

IT 148925-41-1P 148925-42-2P 148925-43-3P 148925-45-5P 148925-46-6P
148925-47-7P 148925-48-8P 148925-49-9P 148925-51-3P 148925-52-4P
148925-53-5P 148925-54-6P 148925-55-7P 148925-57-9P 148925-58-0P
148925-59-1P 148925-60-4P 148925-61-5P 148925-62-6P 148925-63-7P
148925-64-8P **148925-65-9P** 148925-66-0P 148925-67-1P
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and antihypertensive and bronchodilating activity of)

IT 148925-44-4P
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and antihypertensive and bronchodilating activity of, reaction of)

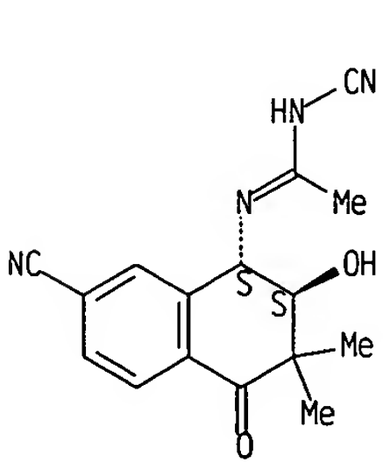
IT 17257-71-5P 32281-97-3P, 7-Bromo-1,2,3,4-Tetrahydronaphthalen-1-one
148925-37-5P, 7-Bromo-2,2-dimethyl-1,2,3,4-tetrahydronaphthalen-1-one
148925-38-6P, 7-Bromo-2,2-dimethyl-1,2-dihydronaphthalen-1-one
148925-39-7P, 7-Bromo-2,2-dimethyl-3,4-epoxy-1,2,3,4-tetrahydronaphthalen-1-one
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of antihypertensive and bronchodilating tetralones)

IT 55-22-1, 4-Pyridinecarboxylic acid, reactions 59-67-6, Nicotinic acid, reactions 65-85-0, Benzoic acid, reactions 98-98-6, 2-Pyridinecarboxylic acid 100-09-4, 4-Methoxybenzoic acid 106-95-6, Allyl bromide, reactions 123-33-1, 3,6-Dihydroxypyridazine 488-93-7, 3-Furoic acid 1193-21-1, 4,6-Dichloropyrimidine 3859-41-4, 1,3-Cyclopentanedione 5231-87-8, 3,4-Diethoxycyclobutene-1,2-dione 56563-07-6 72762-00-6, 2-Hydroxypyridine 148925-40-0 148925-50-2, 6-Bromo-2,2-dimethyl-3,4-epoxy-1,2,3,4-tetrahydronaphthalen-1-one 149455-94-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of antihypertensive and bronchodilating tetralones)

IT **148925-65-9P**
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and antihypertensive and bronchodilating activity of)

RN 148925-65-9 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(7-cyano-1,2,3,4-tetrahydro-2-hydroxy-3,3-dimethyl-4-oxo-1-naphthalenyl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



L24 ANSWER 8 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:212894 HCAPLUS
DN 118:212894
ED Entered STN: 29 May 1993
TI Preparation of benzopyranylcyanoguanidine derivatives
IN Atwal, Karnail; Grover, Gary J.; Kim, Kyoung S.

Search done by Noble Jarrell

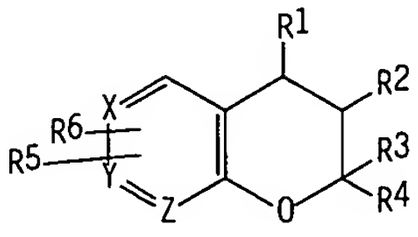
PA E. R. Squibb and Sons, Inc., USA
SO U.S., 25 pp. Cont.-in-part of U.S. Ser. No. 506,632, abandoned.
CODEN: USXXAM
DT Patent
LA English
IC ICM C07D471-02
ICS C07D409-14; C07D311-96; C07D417-04; C07D405-14; A61K031-35; A61K031-66
NCL 514302000
CC 27-14 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5140031	A	19920818	US 1991-661763	19910227 <--
	ZA 9003491	A	19910227	ZA 1990-3491	19900508 <--
	IN 173988	A	19940820	IN 1990-DE494	19900522 <--
	DD 294715	A5	19911010	DD 1990-341153	19900530 <--
	PL 165385	B1	19941230	PL 1990-290038	19900531 <--
	IN 178152	A	19970308	IN 1992-DE96	19920207 <--
	CA 2061699	AA	19920828	CA 1992-2061699	19920224 <--
	CA 2061699	C	20020521		
	AU 9211147	A1	19920903	AU 1992-11147	19920224 <--
	AU 650512	B2	19940623		
	ZA 9201333	A	19921125	ZA 1992-1333	19920224 <--
	NO 9200767	A	19920828	NO 1992-767	19920226 <--
	NO 180679	B	19970217		
	NO 180679	C	19970528		
	EP 501797	A1	19920902	EP 1992-301654	19920227 <--
	EP 501797	B1	19960605		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, PT, SE				
	CN 1064272	A	19920909	CN 1992-101340	19920227 <--
	CN 1035253	B	19970625		
	AT 138919	E	19960615	AT 1992-301654	19920227 <--
	ES 2088537	T3	19960816	ES 1992-301654	19920227 <--
	IN 180495	A	19980207	IN 1992-DE1111	19921126 <--
PRAI	US 1989-359236	B2	19890531 <--		
	US 1990-493060	B2	19900313 <--		
	US 1990-506632	B2	19900409 <--		
	IN 1990-DE494	A1	19900522 <--		
	US 1991-661763	A	19910227 <--		

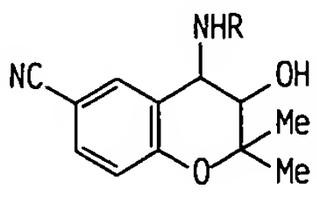
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5140031	ICM	C07D471-02
	ICS	C07D409-14; C07D311-96; C07D417-04; C07D405-14; A61K031-35; A61K031-66
	NCL	514302000
EP 501797	ECLA	C07D311/68; C07D311/70; C07F009/655P60 <--

OS MARPAT 118:212894
GI



I



II

AB Title compds. I [X,Y,Z = CH or 1 of them = N, NO and the others = CH; R1 = R7R8NC(:NCN)NR9 wherein R7 = aryl, heterocyclyl, heterocyclylalkyl, R8 = H, alkyl, aryl, alkenyl, arylalkyl, R9 = H, alkyl, alkenyl, alkenyl, aryl,

Search done by Noble Jarrell

arylalkyl, cycloalkyl, cyclooalkylalkyl; R2 = H, HO, OAc; R3, R4 = H, alkyl, arylaklkyl; R3R4 = 5-7-membered carbocyclyl; R5 = H, alkyl, haloalkyl, alkenyl, alkynyl, etc.; R6 = H, alkyl, HO, alkoxy, (substituted) amino, etc.] having K-channel activity useful as antiischemic agents (no data), are prepared Aminobenzopyran trans-II (R = H) was condensed with NCNHCSNHCMe2Et (preparation given) to give trans-II [R = NHC(:NCN)NHCMe2Et].

ST cyanoguanidine cyanohydroxybenzopyranyl prepn cardiovascular; benzopyranylcyanoguanidine prepn antiischemic; potassium channel activator benzopyranylcyanoguanidine

IT Cardiovascular agents
(benzopyranylcyanoguanidines)

IT Ischemia
(treatment of, benzopyranylcyanoguanidines for)

IT Ion channel openers
(potassium, benzopyranylcyanoguanidines)

IT 41835-08-9P 89125-07-5P 98557-54-1P 118581-55-8P 127419-05-0P
127749-51-3P 127749-52-4P 127779-17-3P 127806-70-6P 129180-58-1P
129180-59-2P 129462-66-4P 129462-74-4P 129462-75-5P 130228-87-4P
132685-98-4P 134017-90-6P 134017-91-7P 134017-92-8P 134017-93-9P
134017-94-0P 134017-96-2P 134017-97-3P 134017-99-5P 134018-01-2P
134028-71-0P 134828-12-9P 144264-59-5P 144264-60-8P 144264-61-9P
144264-62-0P 144264-63-1P 144264-64-2P 144264-65-3P 146941-85-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of cardiovascular agents)

IT 127249-61-0P 127249-68-7P 127249-69-8P 127249-70-1P 127249-71-2P
127249-72-3P 130228-92-1P 130228-95-4P 133178-30-0P
134017-78-0P 134017-79-1P 134017-80-4P 134017-81-5P
134017-82-6P 134017-83-7P 134017-84-8P 134017-85-9P
134017-86-0P 134017-87-1P 134017-88-2P 134035-97-5P 134053-73-9P
134053-74-0P 144264-44-8P 144264-45-9P 144264-46-0P 144264-51-7P
144264-52-8P 144264-53-9P 144264-54-0P 144301-93-9P 144301-94-0P
144301-95-1P 146941-74-4P 146941-75-5P 146941-76-6P 146941-77-7P
146941-78-8P 146941-79-9P 146941-80-2P 146941-81-3P 146941-82-4P
146941-83-5P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as cardiovascular agent)

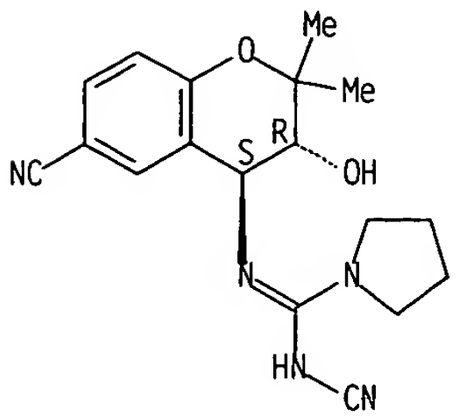
IT 75-31-0, 2-Propanamine, reactions 100-46-9, Benzylamine, reactions
103-72-0, Phenyl isothiocyanate 107-15-3, 1,2-Ethanediamine, reactions
109-76-2, 1,3-Diaminopropane 109-85-3 123-75-1, Pyrrolidine, reactions
506-59-2, Dimethylaminehydrochloride 536-74-3, Phenylacetylene
540-38-5, 4-Iodophenol 542-85-8, Ethyl isothiocyanate 557-66-4, Ethylaminehydrochloride 611-71-2, (R)(-)-Mandelic acid 628-03-5
811-93-8, 1,1-Dimethylethylenediamine 1111-97-3, 3-Chloro-3-methyl-1-butyne 1544-68-9, 4-Fluorophenyl isothiocyanate 1645-65-4, 4-Trifluoromethylphenyl isothiocyanate 2131-55-7, 4-Chlorophenyl isothiocyanate 2131-61-5, (4-Nitrophenyl)isothiocyanate 2284-20-0, 4-Methoxyphenyl isothiocyanate 2392-68-9, 3-Chlorophenylisothiocyanate 2740-81-0, 2-Chlorophenyl isothiocyanate 2759-28-6 3731-51-9, 2-(Aminomethyl)pyridine 3731-52-0, 3-(Aminomethyl)pyridine 3731-53-1, 4-(Aminomethyl)pyridine 4788-37-8 6590-94-9, 3,4-Dichlorophenyl isothiocyanate 10191-60-3 16035-50-0 17199-29-0 17292-62-5, Monosodium cyanamide 33143-29-2 65018-90-8 79463-77-7, Diphenyl cyanocarbonimidate 86776-58-1 86823-96-3 108031-11-4 139674-35-4 139768-71-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of cardiovascular agents)

IT **127249-72-3P 134017-82-6P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

Search done by Noble Jarrell

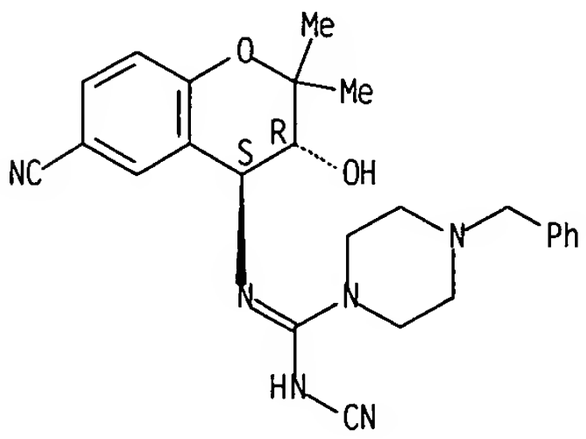
(preparation of, as cardiovascular agent)
RN 127249-72-3 HCAPLUS
CN 1-Pyrrolidinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 134017-82-6 HCAPLUS
CN 1-Piperazinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-4-(phenylmethyl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



L24 ANSWER 9 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:22146 HCAPLUS
DN 118:22146
ED Entered STN: 24 Jan 1993
TI Preparation of N-cyano-N'-(azabicycloalkyl)indolineiminocarboxamides and analogs as 5HT3 receptor antagonists
IN King, Francis David; Gaster, Laramie Mary
PA SmithKline Beecham PLC, UK
SO PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07D451-04
ICS C07D491-08; A61K031-46
ICI C07D491-08, C07D265-00, C07D221-00
CC 27-16 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9214733	A1	19920903	WO 1992-GB310	19920220 <--

W: AU, CA, JP, KR, RU, US
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE

Search done by Noble Jarrell

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     AU 9212095          A1    19920915    AU 1992-12095          19920220 <--
PRAI GB 1991-3839        A     19910223  <--
     WO 1992-GB310       A     19920220  <--
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
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 WO 9214733      ICM    C07D451-04
                 ICS    C07D491-08; A61K031-46
                 ICI    C07D491-08, C07D265-00, C07D221-00
OS   MARPAT 118:22146
GI
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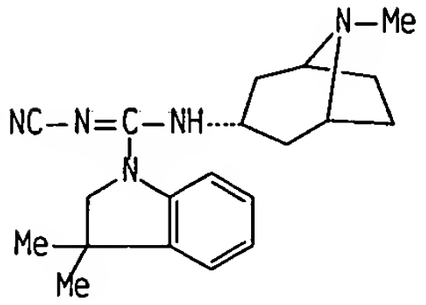


I

AB XC(:Y)NHZ [X = (anellated) Ph, -heteroaryl; Y = NCN, NR1, CR1; R1 = NO2, COR2, SO2R2; R2 = alkyl, NH2, alkylamino, (substituted) Ph; Z = diazacycloalkyl, azabicycloalkyl] were prepared as 5HT3 receptor antagonists (no data). Thus, 3,3-dimethylindoline was condensed with (MeS)2C:NCN and the product condensed with 8-methyl-8-azabicyclo[3.2.1]octan-3-amine to give endo-I.

ST indolinyliminocarboxamide prepn 5HT receptor antagonist

IT Analgesics
Antiemetics
Nervous system agents
(N-cyano-N'-(azabicycloalkyl)indolineiminocarboxamides and analogs)

IT Digestive tract
(disease, treatment of, N-cyano-N'-(azabicycloalkyl)indolineiminocarbox amides and analogs for)

IT 145127-19-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of 5-HT receptor antagonist)

IT **145127-16-8P** 145127-17-9P **145127-18-0P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as 5-HT receptor antagonist)

IT 1914-02-9, 3,3-Dimethylindoline 10191-60-3 66031-28-5, 1,1-Bis(methylthio)-2-nitroethane 87571-88-8 130914-52-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of 5-HT receptor antagonist)

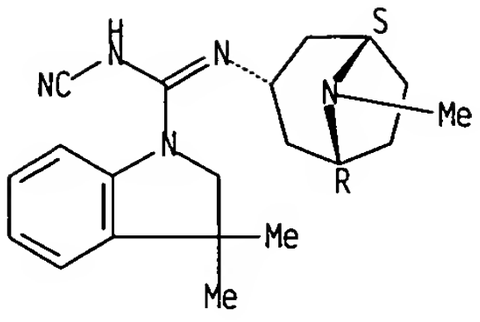
IT **145127-16-8P 145127-18-0P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as 5-HT receptor antagonist)

RN 145127-16-8 HCAPLUS

CN 1H-Indole-1-carboximidamide, N-cyano-2,3-dihydro-3,3-dimethyl-N'-(8-methyl-8-azabicyclo[3.2.1]oct-3-yl)-, endo- (9CI) (CA INDEX NAME)

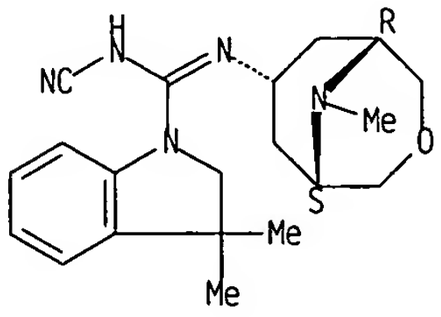
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



RN 145127-18-0 HCAPLUS
CN 1H-Indole-1-carboximidamide, N-cyano-2,3-dihydro-3,3-dimethyl-N'-(9-methyl-3-oxa-9-azabicyclo[3.3.1]non-7-yl)-, endo- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



L24 ANSWER 10 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1992:255603 HCAPLUS
DN 116:255603
ED Entered STN: 27 Jun 1992
TI Preparation of pyridylpyrrolothiazole derivatives as platelet activating factor (PAF) antagonists
IN Mase, Toshiyasu; Kondo, Yutaka; Nagaoka, Hitoshi; Yamada, Toshimitsu; Tomioka, Kenichi
PA Yamanouchi Pharmaceutical Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07D513-04
ICS A61K031-425
CC 28-7 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 1

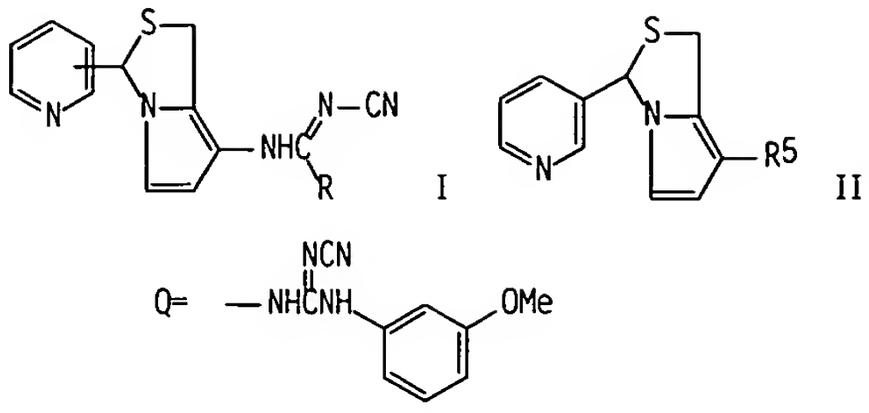
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 03287587	A2	19911218	JP 1990-90960	19900404 <--
PRAI JP 1990-90960		19900404 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 03287587	ICM	C07D513-04
	ICS	A61K031-425

OS MARPAT 116:255603
GI

Search done by Noble Jarrell



AB The title compds. (I; R = NR1R2; R1, R2 = H, alkyl, XC6H4R3; X = single bond, alkylene; R3 = H, alkyl, OH, alkoxy, aralkyloxy, aryloxy, acyl) and their intermediate isourea derivs. I [R = YR4; Y = O, S; R4 = lower alkyl or (un)substituted Ph], which themselves also show anti-PAf activity, are prepared Thus, acylation of a pyrrolo[1,2-c]thiazole derivative (II; R5 = NH2) with di-Ph N-cyanocarbonimidate in 2-propanol at 90.degree. overnight and condensation of the resulting II [R5 = NHC(:NCN)OPh] with 4-phenylbutylamine in 2-propanol at 90.degree. overnight gave II [R5 = NHC(:NCN)NH(CH2)4Ph]. II (R5 = Q) in vitro inhibited PAF-induced coagulation of rabbit blood platelets with IC50 of 4.5 .times. 10-8 M. Addnl. 8 I were prepared

ST pyridylpyrrolothiazolylguanidine prepn PAF antagonist; pyrrolothiazole pyridyl guanidino PAF antagonist; platelet activating factor antagonist

IT 79463-77-7, Diphenyl N-cyanocarbonimidate
RL: RCT (Reactant); RACT (Reactant or reagent)
(acylation by, of aminopyrrolothiazole derivative)

IT 135611-15-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(acylation of, by di-ph N-cyanocarbonimidate)

IT 65154-06-5, Platelet activating factor
RL: RCT (Reactant); RACT (Reactant or reagent)
(antagonists, (pyridylpyrrolothiazolyl)guanidine derivs.)

IT 64-04-0, Phenethylamine 100-46-9, Benzylamine, reactions 104-94-9, p-Anisidine 107-10-8, 1-Propylamine, reactions 536-90-3, m-Anisidine 2835-78-1 3586-12-7, m-Phenoxyaniline 13214-66-9, 4-Phenylbutylamine 41406-00-2, m-Isopropyloxyaniline
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with O-phenyl-N'-pyrrolothiazolylisourea derivative)

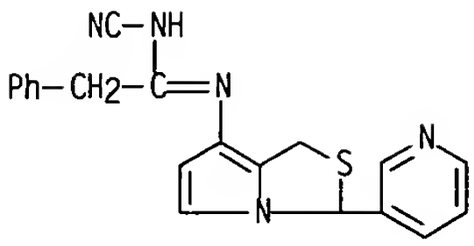
IT 141187-35-1P 141187-36-2P 141187-37-3P **141187-38-4P**
141187-39-5P **141187-40-8P** 141187-41-9P 141187-42-0P
141187-43-1P 141187-44-2P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as platelet activating factor antagonist)

IT **141187-38-4P 141187-40-8P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as platelet activating factor antagonist)

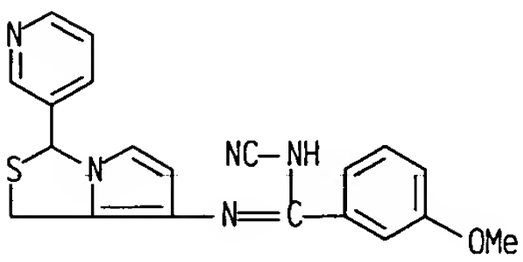
RN 141187-38-4 HCAPLUS

CN Benzeneethanimidamide, N-cyano-N'-[3-(3-pyridinyl)-1H,3H-pyrrolo[1,2-c]thiazol-7-yl]- (9CI) (CA INDEX NAME)

Search done by Noble Jarrell



RN 141187-40-8 HCAPLUS
CN Benzenecarboximidamide, N-cyano-3-methoxy-N'-[3-(3-pyridinyl)-1H-pyrrolo[1,2-c]thiazol-7-yl]- (9CI) (CA INDEX NAME)



L24 ANSWER 11 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1991:449406 HCAPLUS
DN 115:49406
ED Entered STN: 10 Aug 1991
TI Preparation of 6-cyano-2,2-dimethyl-4-[(N-cyanoimidoyl)amino]-2H-benzo[b]pyrans and analogs as antihypertensives and bronchodilators
IN Ohtuka, Katuyuki; Ishiyama, Nobuo; Iida, Yasuhito; Seri, Kenji; Murai, Takeshi; Sanai, Kazuko; Ishizaka, Yoshihiro
PA Kaken Pharmaceutical Co., Ltd., Japan
SO Eur. Pat. Appl., 41 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C07D311-68
ICS A61K031-35
CC 27-14 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1, 63
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 412531	A1	19910213	EP 1990-115242	19900808 <--
	EP 412531	B1	19940511		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	US 5095016	A	19920310	US 1990-562577	19900803 <--
	CA 2022882	AA	19910212	CA 1990-2022882	19900808 <--
	AT 105556	E	19940515	AT 1990-115242	19900808 <--
	AU 9060844	A1	19910214	AU 1990-60844	19900809 <--
	AU 624526	B2	19920611		
	NO 9003524	A	19910212	NO 1990-3524	19900810 <--
	NO 174050	B	19931129		
	NO 174050	C	19940309		
	HU 54673	A2	19910328	HU 1990-4956	19900810 <--
	JP 03279377	A2	19911210	JP 1990-213529	19900810 <--
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	JP 3037980	B2	20000508		
	CN 1049500	A	19910227	CN 1990-107121	19900811 <--
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	JP 1989-341528	A	19891229 <--		
	JP 1990-73653	A	19900323 <--		
	JP 1990-73654	A	19900323 <--		

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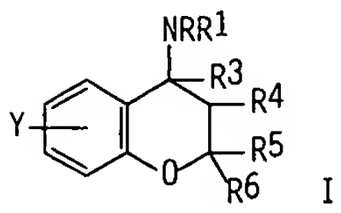
EP 1990-115242 A 19900808 <--
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 412531	ICM	C07D311-68
	ICS	A61K031-35

OS MARPAT 115:49406
GI



I

AB Title compds. [I; R = R2C:NCN; R1 = H, (un) substituted alkyl, alkenyl, alkynyl, R7CO; R2 = (substituted) alkyl, Ph; R3 = H; R4 = OH; R3R4 = bond; R5, R6 = alkyl; R7 = alkyl, Ph, alkoxy, (Ph substituted) alkenyl; Y = cyano, halo, NO2, alkyl(carbonyl), alkynyl, carboxyl, aryl, morpholinocarbonyl, etc.] (II) or their pharmaceutically acceptable salts, were prepared, e.g., by reaction of aminobenzopyranols (I; R = R1 = H, R3 = OH, Y .noteq. CO2H) with R2(OR8)C:NCN (R8 = alkyl, R2 as above). Thus, a mixture of 1.23 g N-cyanoacetimidate and 2.18 g 6-cyano-3,4-dihydro-2,2-dimethyl-trans-4-amino-2H-benzo[b]pyran-3-ol was stirred for 2 h at 100-120.degree. to give 1.75 g title compound (I; R = CMe:NCN, R1 = R3 = H, R4 = OH, R5 = R6 = Me, Y = 6-cyano) (III). The latter at 3 mg/kg orally in rats reduced blood pressure to 56% of preadministration values after 3 h. In vitro 3 .times. 10-6M III gave 41.6% relaxation of guinea pig trachial smooth muscle.

ST cyanodimethylcyanoimidoylaminobenzopyran prepn antihypertensive bronchodilator; benzopyranylaminocyanoimidate prepn antihypertensive bronchodilator

IT Antihypertensives
Bronchodilators
(cyanodimethyl(cyanoimidoylamino)benzopyran and analogs)

IT 75-36-5, Acetyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(acylation by, of aminobenzopyran derivative, in preparation of hypertensive and bronchodilator)

IT 110-91-8, Morpholine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(amidation by, of carboxybenzopyran derivative, in preparation of antihypertensive and bronchodilator)

IT 105-36-2, Ethyl bromoacetate
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with aminobenzopyran derivative, in preparation of antihypertensive and bronchodilator)

IT 134017-97-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and desilylation of, in preparation of antihypertensive and bronchodilator)

IT **134828-13-0P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and elimination reaction of, in preparation of antihypertensive and bronchodilator)

IT **133178-23-1P 133178-25-3P 133178-26-4P**
133178-28-6P 133178-29-7P 133178-31-1P
133178-32-2P 133178-35-5P 133178-36-6P
133178-37-7P 133178-41-3P 133178-44-6P

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133178-48-0P 133178-50-4P 133178-55-9P
134827-45-5P 134827-46-6P 134827-47-7P 134827-48-8P
134827-49-9P 134827-50-2P 134827-51-3P **134827-52-4P**
134827-53-5P 134827-54-6P 134827-55-7P
134827-56-8P 134827-57-9P 134827-58-0P
134827-59-1P 134827-60-4P 134827-61-5P
134827-62-6P 134827-63-7P 134827-64-8P
134827-65-9P 134827-66-0P 134827-67-1P
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134828-01-6P 134828-02-7P 134828-03-8P 134828-04-9P 134828-05-0P
134828-06-1P 134828-07-2P **134828-08-3P 134828-09-4P**
134828-10-7P 134828-11-8P 134828-12-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as antihypertensive and bronchodilator)

IT 1558-82-3 4428-98-2, Ethyl N-cyanoformimidate 33490-49-2 54356-31-9, Ethyl N-cyanopropionimidate 54356-33-1 100220-54-0, Ethyl N-cyanobutyrimidate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with aminobenzopyran derivative, in preparation of antihypertensive and bronchodilator)

IT 86776-58-1 89316-91-6 134828-14-1 134828-15-2 134828-16-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with cyanoimidates, in preparation of antihypertensives and bronchodilators)

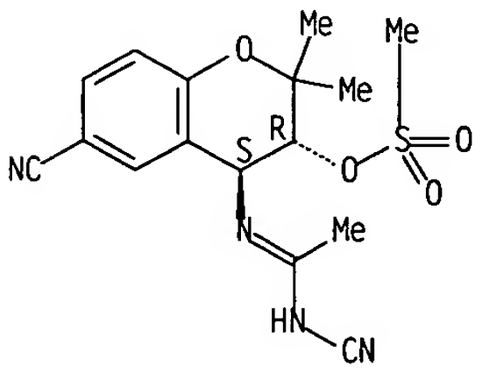
IT 1066-54-2, Trimethylsilyl acetylene
RL: RCT (Reactant); RACT (Reactant or reagent)
(substitution reaction of, with bromobenzopyran derivative, in preparation of antihypertensive and bronchodilator)

IT 122262-14-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(substitution reaction of, with silylacetylene, in preparation of antihypertensive and bronchodilator)

IT **134828-13-0P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and elimination reaction of, in preparation of antihypertensive and bronchodilator)

RN 134828-13-0 HCAPLUS
CN Ethanimidamide, N-cyano-N'-[6-cyano-3,4-dihydro-2,2-dimethyl-3-[(methylsulfonyl)oxy]-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



IT **133178-23-1P 133178-25-3P 133178-26-4P**

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133178-28-6P 133178-29-7P 133178-31-1P
133178-32-2P 133178-35-5P 133178-36-6P
133178-37-7P 133178-41-3P 133178-44-6P
133178-48-0P 133178-50-4P 133178-55-9P
134827-45-5P 134827-49-9P 134827-52-4P
134827-53-5P 134827-54-6P 134827-55-7P
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134827-59-1P 134827-60-4P 134827-61-5P
134827-62-6P 134827-63-7P 134827-64-8P
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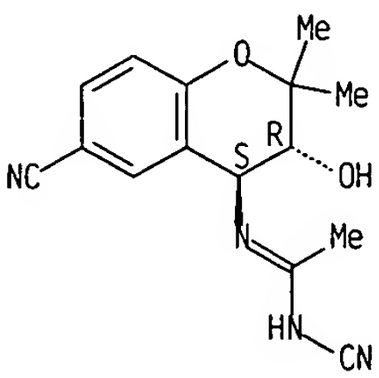
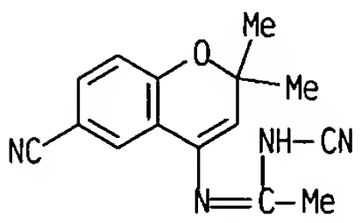
134827-68-2P 134827-69-3P 134827-70-6P
134827-71-7P 134827-72-8P 134827-73-9P
134827-74-0P 134827-75-1P 134827-76-2P
134827-77-3P 134827-78-4P 134828-08-3P
134828-09-4P 134828-10-7P 134828-11-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as antihypertensive and bronchodilator)

RN 133178-23-1 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.

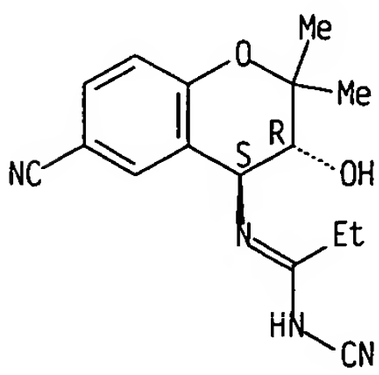


RN 133178-25-3 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)-(9CI) (CA INDEX NAME)



RN 133178-26-4 HCAPLUS
CN Propanimidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



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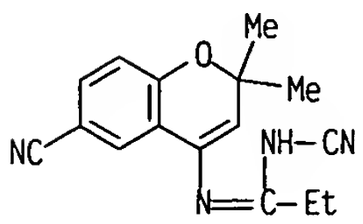
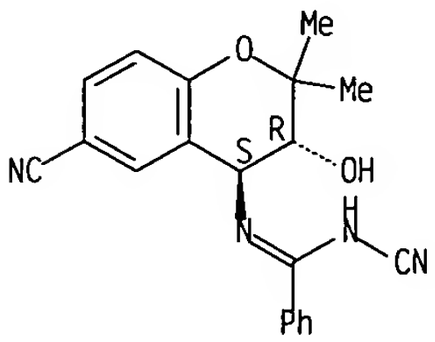
RN 133178-28-6 HCAPLUS
CN Propanimidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)-(9CI) (CA INDEX NAME)



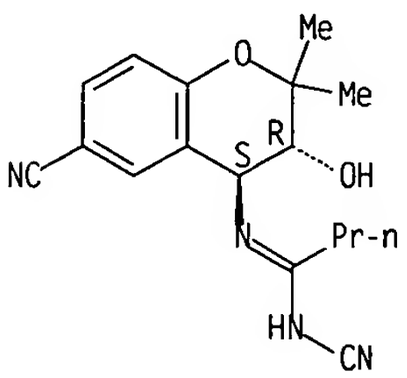
RN 133178-29-7 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



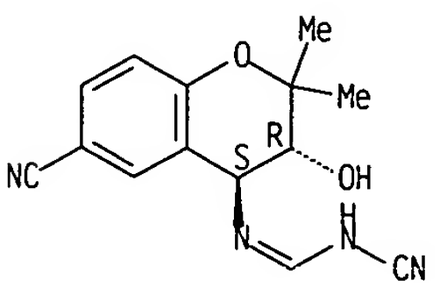
RN 133178-31-1 HCAPLUS
CN Butanimidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 133178-32-2 HCAPLUS
CN Methanimidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

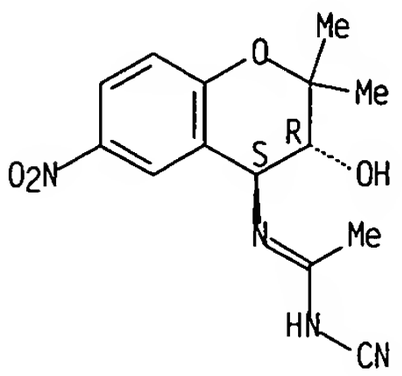
Relative stereochemistry.
Double bond geometry unknown.



Search done by Noble Jarrell

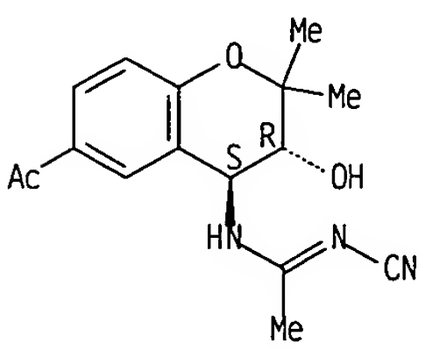
RN 133178-35-5 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



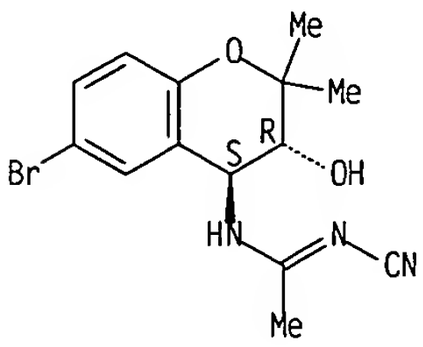
RN 133178-36-6 HCAPLUS
CN Ethanimidamide, N-(6-acetyl-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-N'-cyano-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



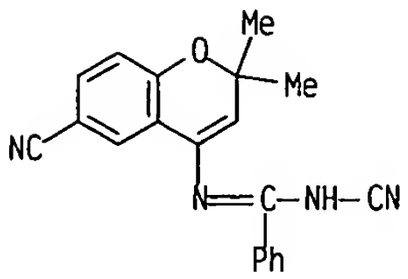
RN 133178-37-7 HCAPLUS
CN Ethanimidamide, N-(6-bromo-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-N'-cyano-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.

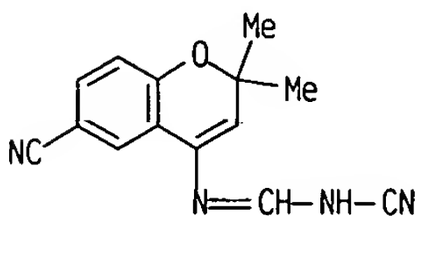


RN 133178-41-3 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)- (9CI) (CA INDEX NAME)

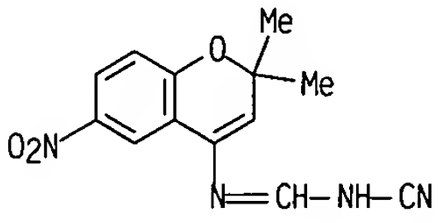
Search done by Noble Jarrell



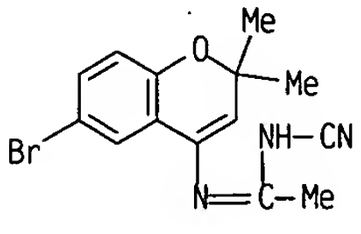
RN 133178-44-6 HCAPLUS
CN Methanimidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)-
(9CI) (CA INDEX NAME)



RN 133178-48-0 HCAPLUS
CN Methanimidamide, N-cyano-N'-(2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-
(9CI) (CA INDEX NAME)

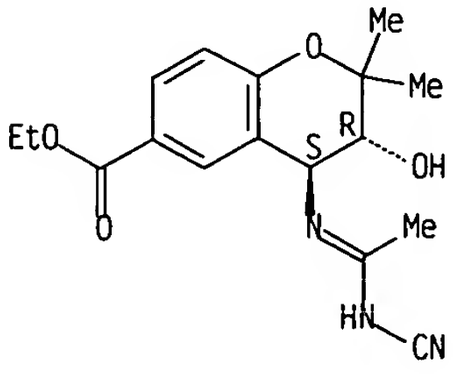


RN 133178-50-4 HCAPLUS
CN Ethanimidamide, N-(6-bromo-2,2-dimethyl-2H-1-benzopyran-4-yl)-N'-cyano-
(9CI) (CA INDEX NAME)



RN 133178-55-9 HCAPLUS
CN 2H-1-Benzopyran-6-carboxylic acid, 4-[[1-(cyanoamino)ethylidene]amino]-3,4-
dihydro-3-hydroxy-2,2-dimethyl-, ethyl ester, trans- (9CI) (CA INDEX
NAME)

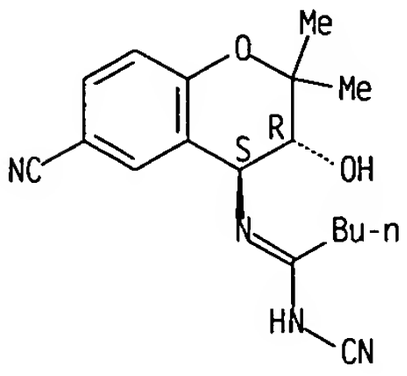
Relative stereochemistry.
Double bond geometry unknown.



Search done by Noble Jarrell

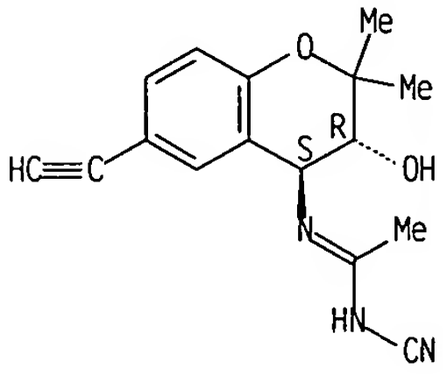
RN 134827-45-5 HCAPLUS
CN Pentanimidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



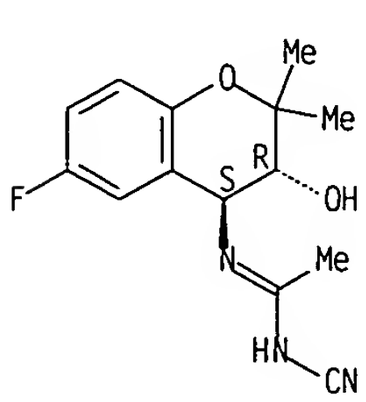
RN 134827-49-9 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(6-ethynyl-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 134827-52-4 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(6-fluoro-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

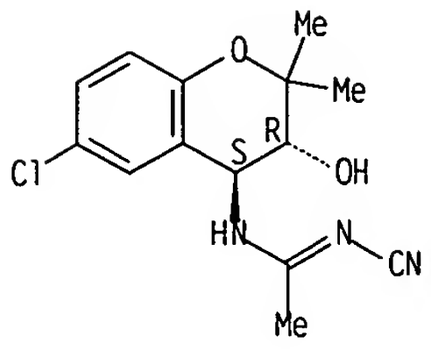
Relative stereochemistry.
Double bond geometry unknown.



RN 134827-53-5 HCAPLUS
CN Ethanimidamide, N-(6-chloro-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-N'-cyano-, trans- (9CI) (CA INDEX NAME)

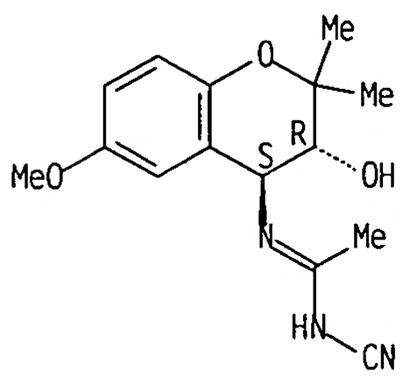
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



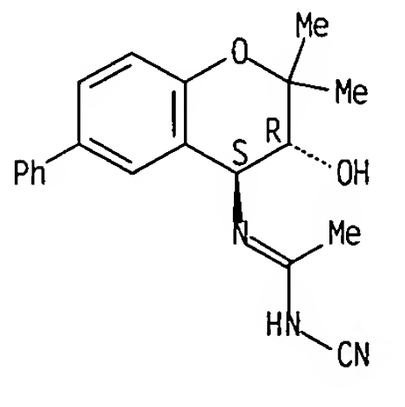
RN 134827-54-6 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-6-methoxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



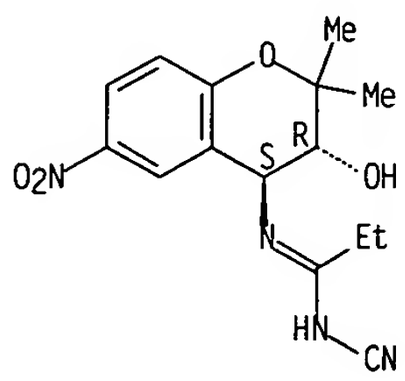
RN 134827-55-7 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2-dimethyl-6-phenyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 134827-56-8 HCAPLUS
CN Propanimidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

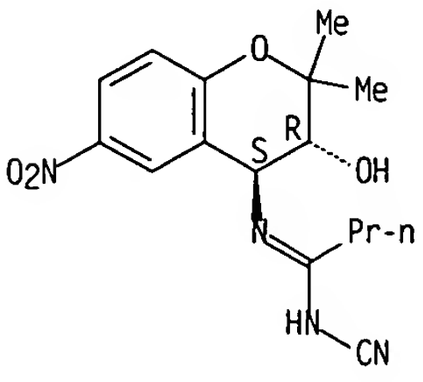
Relative stereochemistry.
Double bond geometry unknown.



Search done by Noble Jarrell

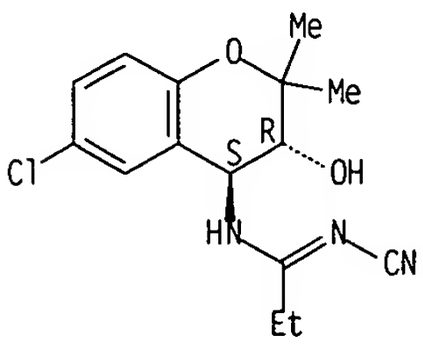
RN 134827-57-9 HCAPLUS
CN Butanimidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



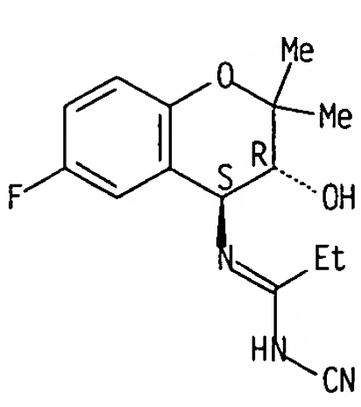
RN 134827-58-0 HCAPLUS
CN Propanimidamide, N-(6-chloro-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-N'-cyano-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 134827-59-1 HCAPLUS
CN Propanimidamide, N-cyano-N'-(6-fluoro-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

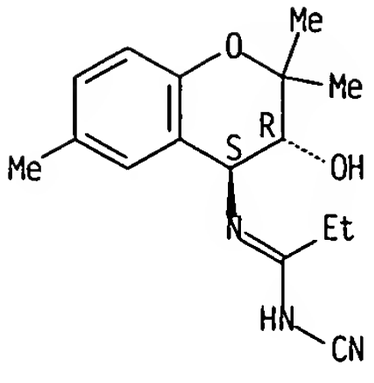
Relative stereochemistry.
Double bond geometry unknown.



RN 134827-60-4 HCAPLUS
CN Propanimidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2,6-trimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

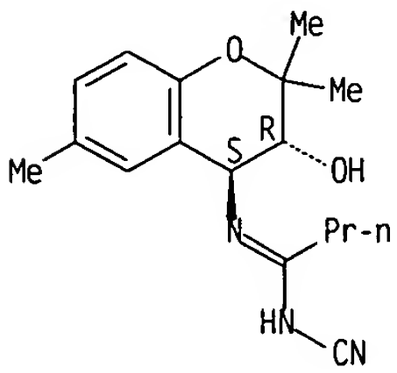
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



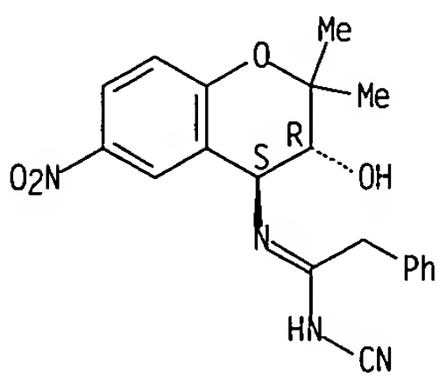
RN 134827-61-5 HCAPLUS
CN Butanimidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2,6-trimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



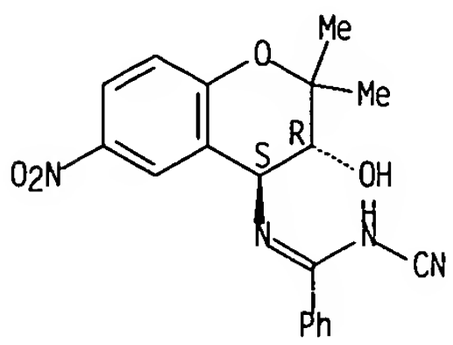
RN 134827-62-6 HCAPLUS
CN Benzeneethanimidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 134827-63-7 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

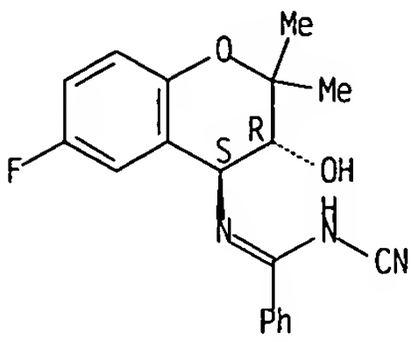
Relative stereochemistry.
Double bond geometry unknown.



Search done by Noble Jarrell

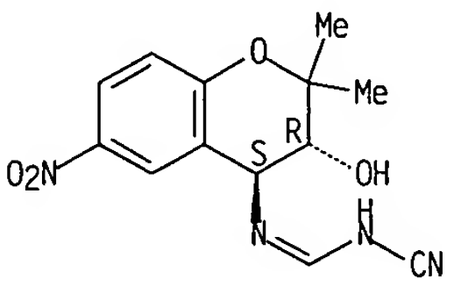
RN 134827-64-8 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(6-fluoro-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



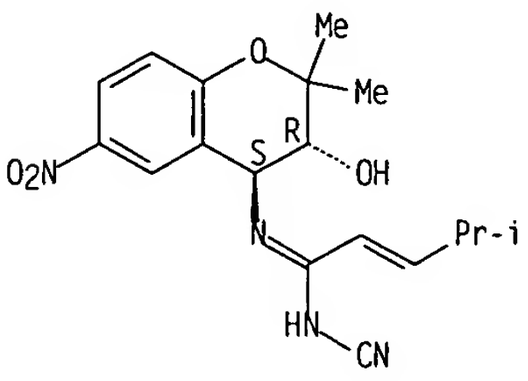
RN 134827-65-9 HCAPLUS
CN Methanimidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 134827-66-0 HCAPLUS
CN 2-Pentenimidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-4-methyl-, trans- (9CI) (CA INDEX NAME)

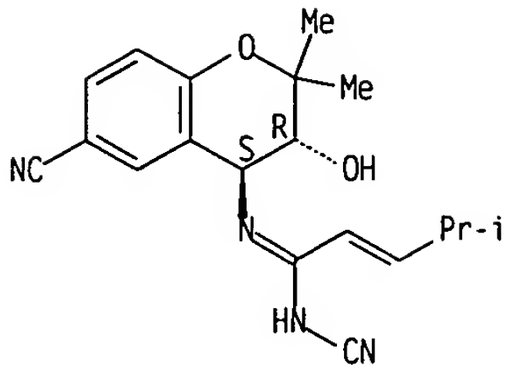
Relative stereochemistry.
Double bond geometry unknown.



RN 134827-67-1 HCAPLUS
CN 2-Pentenimidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-4-methyl-, trans- (9CI) (CA INDEX NAME)

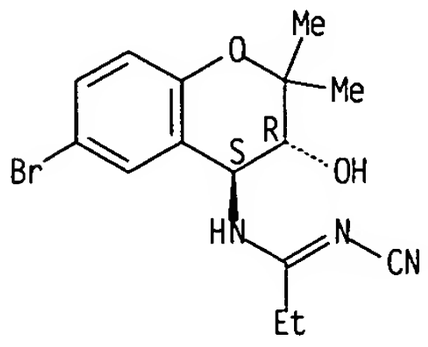
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell

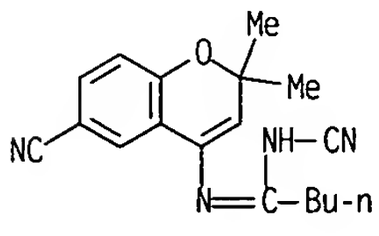


RN 134827-68-2 HCAPLUS
CN Propanimidamide, N-(6-bromo-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-N'-cyano-, trans- (9CI) (CA INDEX NAME)

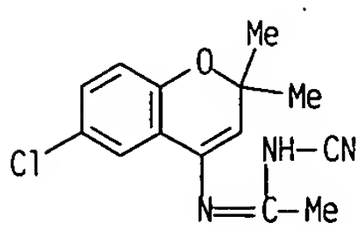
Relative stereochemistry.
Double bond geometry unknown.



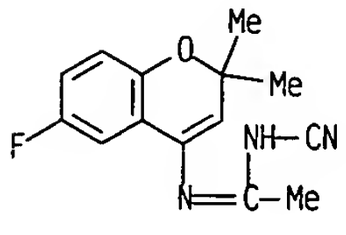
RN 134827-69-3 HCAPLUS
CN Pentanimidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)- (9CI) (CA INDEX NAME)



RN 134827-70-6 HCAPLUS
CN Ethanimidamide, N-(6-chloro-2,2-dimethyl-2H-1-benzopyran-4-yl)-N'-cyano- (9CI) (CA INDEX NAME)

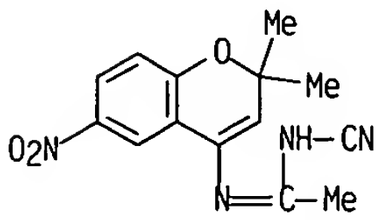


RN 134827-71-7 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(6-fluoro-2,2-dimethyl-2H-1-benzopyran-4-yl)- (9CI) (CA INDEX NAME)

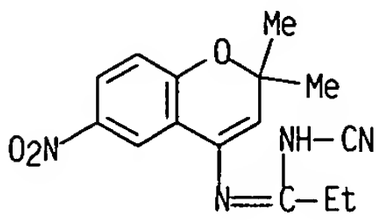


Search done by Noble Jarrell

RN 134827-72-8 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-
(9CI) (CA INDEX NAME)



RN 134827-73-9 HCAPLUS
CN Propanimidamide, N-cyano-N'-(2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-
(9CI) (CA INDEX NAME)



RN 134827-74-0 HCAPLUS
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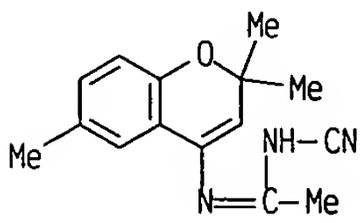
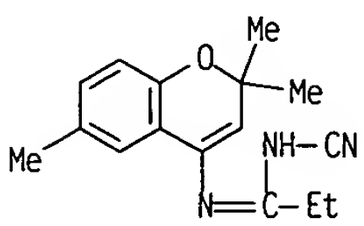
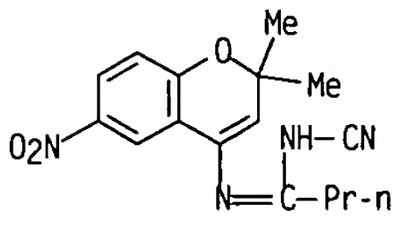
(CA INDEX NAME)



RN 134827-75-1 HCAPLUS
CN Propanimidamide, N-cyano-N'-(2,2,6-trimethyl-2H-1-benzopyran-4-yl)- (9CI)
(CA INDEX NAME)

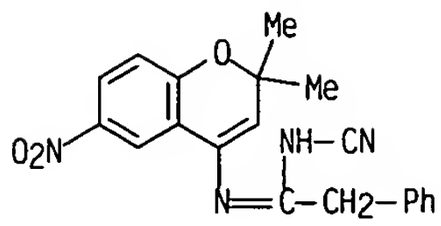


RN 134827-76-2 HCAPLUS
CN Butanimidamide, N-cyano-N'-(2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-
(9CI) (CA INDEX NAME)

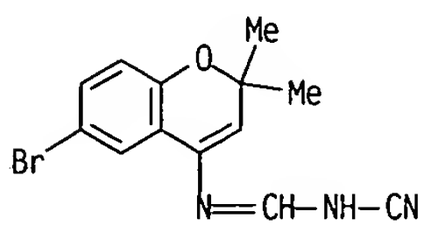


RN 134827-77-3 HCAPLUS
CN Benzeneethanimidamide, N-cyano-N'-(2,2-dimethyl-6-nitro-2H-1-benzopyran-4-
yl)- (9CI) (CA INDEX NAME)

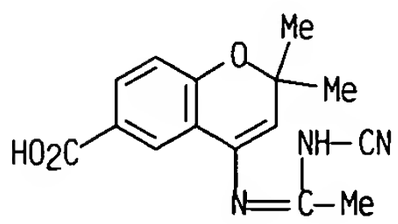
Search done by Noble Jarrell



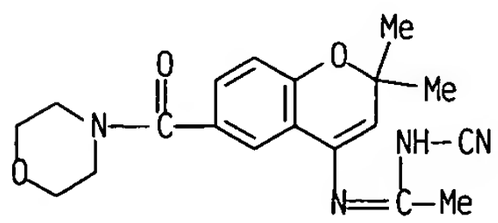
RN 134827-78-4 HCAPLUS
CN Methanimidamide, N-(6-bromo-2,2-dimethyl-2H-1-benzopyran-4-yl)-N'-cyano- (9CI) (CA INDEX NAME)



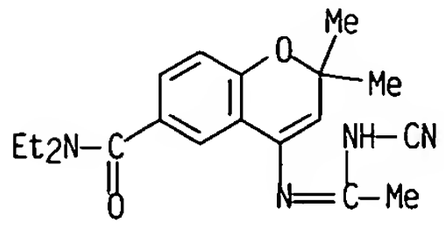
RN 134828-08-3 HCAPLUS
CN 2H-1-Benzopyran-6-carboxylic acid, 4-[[1-(cyanoamino)ethylidene]amino]-2,2-dimethyl- (9CI) (CA INDEX NAME)



RN 134828-09-4 HCAPLUS
CN Morpholine, 4-[[4-[[1-(cyanoamino)ethylidene]amino]-2,2-dimethyl-2H-1-benzopyran-6-yl]carbonyl]- (9CI) (CA INDEX NAME)

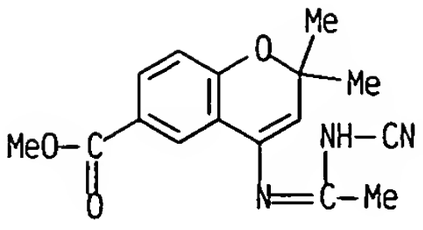


RN 134828-10-7 HCAPLUS
CN 2H-1-Benzopyran-6-carboxamide, 4-[[1-(cyanoamino)ethylidene]amino]-N,N-diethyl-2,2-dimethyl- (9CI) (CA INDEX NAME)



RN 134828-11-8 HCAPLUS
CN 2H-1-Benzopyran-6-carboxylic acid, 4-[[1-(cyanoamino)ethylidene]amino]-2,2-dimethyl-, methyl ester (9CI) (CA INDEX NAME)

Search done by Noble Jarrell



L24 ANSWER 12 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1991:247115 HCAPLUS
DN 114:247115
ED Entered STN: 28 Jun 1991
TI Preparation of N"-cyano-N-(6-cyano-3-hydroxy-3,4-dihydro-2H-1-benzopyran-4-yl)guanidines and analogs as cardiovascular agents
IN Atwal, Karnail; Grover, Gary James; Kim, Kyoung Soon
PA E. R. Squibb and Sons, Inc., USA
SO Eur. Pat. Appl., 34 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C07D311-68
ICS C07D405-04; C07D491-04; A61K031-35; C07D405-14
CC 27-7 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 401010	A2	19901205	EP 1990-305920	19900531 <--
	EP 401010	A3	19910502		
	EP 401010	B1	19960821		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	CA 2015296	AA	19901130	CA 1990-2015296	19900424 <--
	CA 2015296	C	20010807		
	AU 9054552	A1	19901206	AU 1990-54552	19900430 <--
	AU 633082	B2	19930121		
	ZA 9003491	A	19910227	ZA 1990-3491	19900508 <--
	IL 94326	A1	19951208	IL 1990-94326	19900508 <--
	IN 173988	A	19940820	IN 1990-DE494	19900522 <--
	NO 9002394	A	19901203	NO 1990-2394	19900530 <--
	NO 174807	B	19940405		
	NO 174807	C	19940713		
	JP 03027375	A2	19910205	JP 1990-143243	19900530 <--
	HU 55055	A2	19910429	HU 1990-3271	19900530 <--
	HU 207857	B	19930628		
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	PL 166192	B1	19950428	PL 1990-290037	19900531 <--
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	ES 2090099	T3	19961016	ES 1990-305920	19900531 <--
	FI 109120	B1	20020531	FI 1990-2710	19900531 <--
	JP 05239049	A2	19930917	JP 1991-158327	19910628 <--
	IN 178152	A	19970308	IN 1992-DE96	19920207 <--
	IN 180495	A	19980207	IN 1992-DE1111	19921126 <--
PRAI	US 1989-359236	A	19890531 <--		
	US 1990-493060	A	19900313 <--		
	IN 1990-DE494	A1	19900522 <--		

CLASS

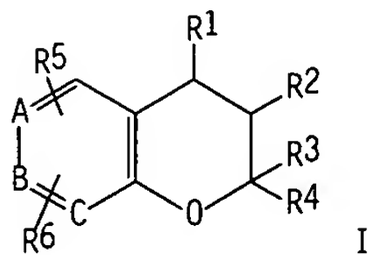
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES

Search done by Noble Jarrell

EP 401010	ICM	C07D311-68
	ICS	C07D405-04; C07D491-04; A61K031-35; C07D405-14
EP 401010	ECLA	C07D311/68; C07D405/04+311+239B; C07D405/06+311+213; C07D491/04+311B+221B; C07F009/655P60; C07F; C07F009/6561; C07F009/6571L4 <--
PL 166174	ECLA	C07F009/655P60; C07F009/6571L4; C07F009/6561; C07F009/6558C; C07D491/04+311B+221B; C07D405/06+311+213; C07D405/04+311+239B; C07D311/68 <--
PL 166230	ECLA	C07F009/655P60; C07D311/68; C07F009/6561; C07F009/6558C; C07F009/6571L4; C07D491/04+311B+221B; C07D040/06+311+213; C07D405/04+311+239B <--
PL 166192	ECLA	C07F009/6561; C07F009/655P60; C07F009/6571L4; C07F009/6558C; C07D405/06+311+213; C07D491/04+311B+221B; C07D311/68; C07D405/04+311+239B <--

OS MARPAT 114:247115

GI



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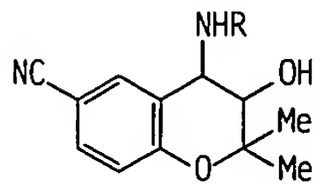


II

AB The title compds. [I; A, B, C = CH or 1 of A, B, C = N or NO and the others = CH; R1 = R7R8NC(:NCN)NR9; R2 = H, OH, OAc; R3, R4 = H, (ar)alkyl; R3 R4 = atoms to form a 5- to 7-membered carbocyclic ring; R5 = H, (halo)alkyl, alkenyl, cyano, etc.; R6 = H, OH, alkoxy, cyano, NO2, (substituted) NH2; R7, R8 = H, (cyclo)alkyl, aryl, heterocyclyl, etc.; NR7R8 = (un)substituted heterocyclyl; R9 = H, (cyclo)alkyl, alkenyl, aryl, etc.; R8R9 = antoms to complete a 5- to 7-membered (un)substituted ring]. K-channel activators, were prepared as antiischemics and antihypertensive (no data). Thus, aminobenzopyran trans-II (R = H) was condensed with NCNHCSNHCMe2Et (preparation given) to given trans-II [R = NHC(:NCN)NHCMe2Et].

ST cyanoguanidine cyanohydroxybenzopyranyl prepn cardiovascular; benzopyranylcyanoguanidine prepn antiischemic antihypertensive

IT Antihypertensives
(N''-cyano-N-(cyanohydroxydihydrobenzopyranyl)guanidines and analogs)

IT 41835-08-9P 89125-07-5P 118581-55-8P 127419-05-0P 127749-52-4P
129180-58-1P 129180-59-2P 129462-66-4P 130228-87-4P 134017-89-3P
134017-90-6P 134017-91-7P 134017-92-8P 134017-93-9P 134017-94-0P
134017-95-1P 134017-96-2P 134017-97-3P 134017-98-4P 134017-99-5P
134018-00-1P 134018-01-2P 134028-71-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of cardiovascular agents)

IT 127249-54-1P 127249-61-0P 127249-68-7P 127249-69-8P 127249-70-1P
127249-71-2P **127249-72-3P** 127249-80-3P 130228-92-1P
130228-95-4P 134017-78-0P 134017-79-1P 134017-80-4P 134017-81-5P
134017-82-6P 134017-83-7P 134017-84-8P 134017-85-9P
134017-86-0P 134017-87-1P 134017-88-2P 134035-97-5P 134053-73-9P
134053-74-0P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as cardiovascular agent)

IT 75-31-0, Isopropylamine, reactions 100-46-9, Benzylamine, reactions
103-72-0, Phenylisothiocyanate 107-15-3, Ethylenediamine, reactions

Search done by Noble Jarrell

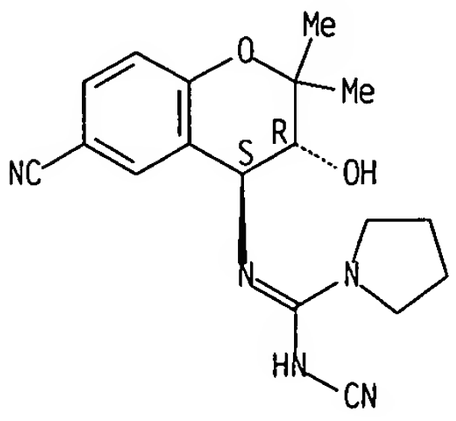
109-76-2, 1,3-Diaminopropane 123-75-1, Pyrrolidine, reactions
536-74-3, Phenylacetylene 540-38-5, 4-Iodophenol 542-85-8, Ethyl isothiocyanate 597-97-7 611-71-2, (R)-(-)-Mandelic acid 811-93-8, 1,1-Dimethylethylenediamine 1111-97-3, 3-Chloro-3-methyl-1-butyne 2759-28-6 3731-52-0, 3-(Aminomethyl)pyridine 3731-53-1, 4-(Aminomethyl)pyridine 4788-37-8 10191-60-3 16035-50-0 17199-29-0, (S)-(+)-Mandelic acid 17292-62-5, Monosodium cyanamide 65018-90-8 79463-77-7, Diphenylcyanocarbonimidate 86776-58-1 86823-96-3 89316-91-6 108031-11-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of cardiovascular agents)

IT 7440-09-7, Potassium, biological studies
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(transport of, activation of, N''-cyano-N-(cyanohydroxydihydrobenzopyranyl)guanidines and analogs as)

IT **127249-72-3P 134017-82-6P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as cardiovascular agent)

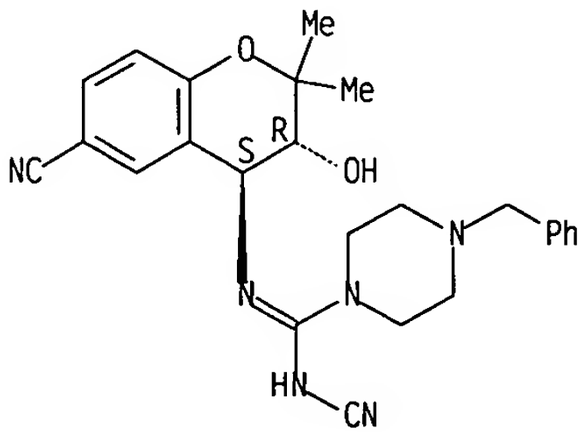
RN 127249-72-3 HCAPLUS
CN 1-Pyrrolidinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 134017-82-6 HCAPLUS
CN 1-Piperazinecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-4-(phenylmethyl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



L24 ANSWER 13 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1991:164007 HCAPLUS
DN 114:164007
ED Entered STN: 03 May 1991

Search done by Noble Jarrell

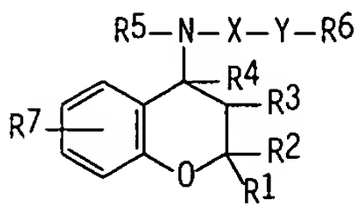
TI Preparation of benzopyran derivatives as antihypertensives
IN Shiokawa, Youichi; Takimoto, Koichi; Takenaka, Kohei; Kato, Takeshi
PA Fujisawa Pharmaceutical Co., Ltd., Japan
SO Eur. Pat. Appl., 39 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C07D311-68
ICS C07D405-04; C07D417-04; A61K031-35
ICI C07D405-04, C07D311-00, C07D207-00; C07D417-04, C07D311-00, C07D277-00
CC 27-14 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 389861	A1	19901003	EP 1990-104702	19900313 <--
EP 389861	B1	19950823		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
US 5104890	A	19920414	US 1990-490375	19900308 <--
CA 2013163	AA	19900928	CA 1990-2013163	19900327 <--
JP 02300182	A2	19901212	JP 1990-80045	19900328 <--
PRAI GB 1989-6950	A	19890328 <--		
GB 1989-9278	A	19890424 <--		
GB 1989-26822	A	19891128 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 389861	ICM	C07D311-68
	ICS	C07D405-04; C07D417-04; A61K031-35
	ICI	C07D405-04, C07D311-00, C07D207-00; C07D417-04, C07D311-00, C07D277-00
EP 389861	ECLA	C07D311/68; C07D405/04+311C+207; C07D417/04+311C+277; C07D417/04+311C+285B; C07D417/04+311C+277B <--

OS MARPAT 114:164007
GI



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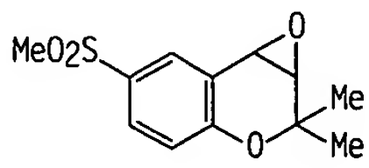

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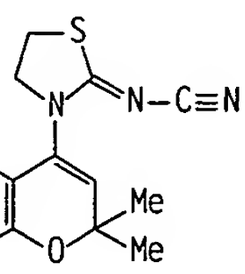


III

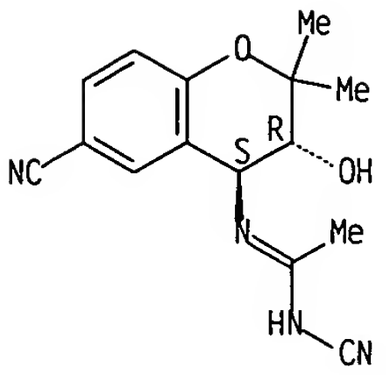
AB Title benzopyrans I [R1,R2 = C1-6 alkyl; R3 = OH or acyloxy and R4 = H, or R3R4 = bond; R5 = H, C1-6 alkyl; R6 = H, C1-6 alkyl, aryl; or R5R6 = alkylene; R7 = cyano, acyl, halo, NO2, C1-6 alkyl, alkylsulfonyl, etc.; X = cyanoiminomethylene or SO2; Y = bond, thio, (C1-6 alkyl)imino] and related compds., useful as antihypertensives, were prepared For example, reaction of epoxide II (preparation given) with 2-(cyanoimino)thiazolidine at 100.degree. in DMF in the presence of Et2N gave the corresponding I (R3 = OH). Subsequent acetylation and reaction with DBU gave a benzopyran III. III at 1.0 mg/kg i.v. showed a 49.2% maximum decrease in blood pressure in rats.
ST benzopyran prepn antihypertensive; vasodilator benzopyran prepn
IT Antihypertensives
Vasodilators

Search done by Noble Jarrell

(benzopyran derivs.)
IT 7440-09-7P, Potassium, preparation
RL: PREP (Preparation)
(channels, activators for, benzopyran derivs. for)
IT 15020-57-2P, 4-Hydroxy-N,N-dimethylbenzenesulfonamide 19013-07-1P
59907-37-8P, 4-Methoxy-N,N-dimethylbenzenesulfonamide 65018-69-1P
65018-70-4P 69964-40-5P 86823-96-3P 89316-91-6P 89316-98-3P
94470-71-0P 118383-29-2P 118383-30-5P 120728-68-9P 122262-14-0P
133178-03-7P 133178-61-7P 133178-62-8P 133178-63-9P 133178-64-0P
133178-65-1P 133178-66-2P 133178-67-3P 133178-68-4P 133178-69-5P
133946-62-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of antihypertensives)
IT 133178-04-8P 133178-05-9P 133178-06-0P 133178-07-1P 133178-08-2P
133178-09-3P 133178-10-6P 133178-11-7P 133178-12-8P 133178-13-9P
133178-14-0P 133178-15-1P 133178-16-2P 133178-17-3P 133178-18-4P
133178-19-5P 133178-20-8P 133178-21-9P 133178-22-0P
133178-23-1P **133178-24-2P** **133178-25-3P**
133178-26-4P **133178-27-5P** **133178-28-6P**
133178-29-7P 133178-30-0P **133178-31-1P**
133178-32-2P **133178-33-3P** **133178-34-4P**
133178-35-5P **133178-36-6P** **133178-37-7P**
133178-38-8P **133178-39-9P** 133178-40-2P
133178-41-3P **133178-42-4P** 133178-43-5P
133178-44-6P 133178-45-7P 133178-46-8P **133178-47-9P**
133178-48-0P 133178-49-1P **133178-50-4P**
133178-51-5P 133178-52-6P **133178-53-7P** 133178-54-8P
133178-55-9P **133178-56-0P** **133178-57-1P**
133178-58-2P **133178-59-3P** 133178-60-6P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as antihypertensive)
IT 75-16-1, Methylmagnesium bromide 98-68-0, 4-Methoxybenzenesulfonyl chloride 124-40-3, Dimethylamine, reactions 1111-97-3, 3-Chloro-3-methyl-1-butyne 1558-82-3, Ethyl N-cyanoacetimidate 7664-41-7, Ammonia, reactions 10191-60-3, Dimethyl N-cyanoiminodithiocarbonate 26364-65-8, 2-(Cyanoimino)thiazolidine 33143-29-2 54356-31-9, Ethyl N-cyanopropionimidate 54554-02-8 67104-97-6 133178-70-8, Methyl N-cyano-4-chlorobutyrimidate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of antihypertensives)
IT **133178-23-1P** **133178-24-2P** **133178-25-3P**
133178-26-4P **133178-27-5P** **133178-28-6P**
133178-29-7P **133178-31-1P** **133178-32-2P**
133178-33-3P **133178-34-4P** **133178-35-5P**
133178-36-6P **133178-37-7P** **133178-38-8P**
133178-39-9P **133178-41-3P** **133178-42-4P**
133178-44-6P **133178-47-9P** **133178-48-0P**
133178-50-4P **133178-51-5P** **133178-53-7P**
133178-55-9P **133178-56-0P** **133178-57-1P**
133178-59-3P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as antihypertensive)
RN 133178-23-1 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

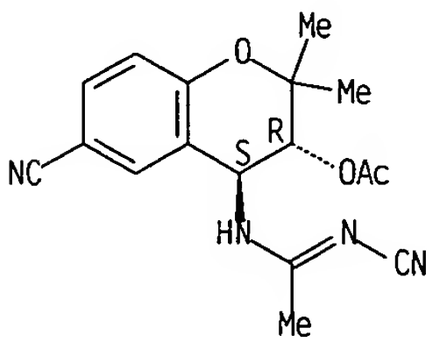
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell

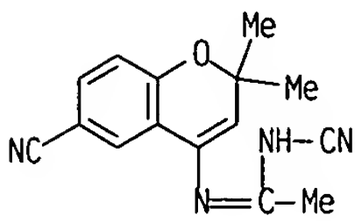


RN 133178-24-2 HCAPLUS
CN Ethanimidamide, N-[3-(acetyloxy)-6-cyano-3,4-dihydro-2,2-dimethyl-2H-1-benzopyran-4-yl]-N'-cyano-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.

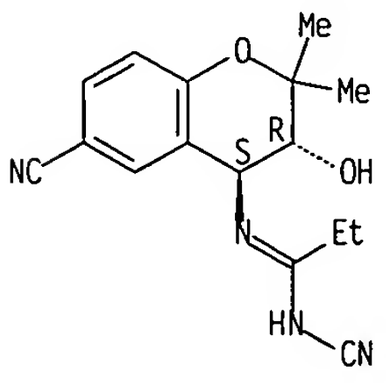


RN 133178-25-3 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)- (9CI) (CA INDEX NAME)



RN 133178-26-4 HCAPLUS
CN Propanimidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.

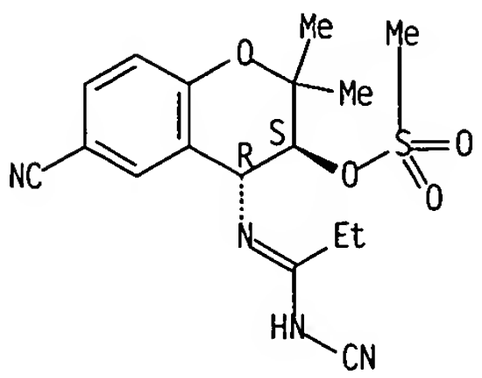


RN 133178-27-5 HCAPLUS
CN Propanimidamide, N-cyano-N'-[6-cyano-3,4-dihydro-2,2-dimethyl-3-[(methylsulfonyl)oxy]-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

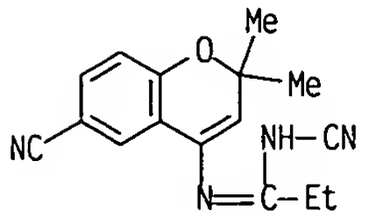
Relative stereochemistry.

Search done by Noble Jarrell

Double bond geometry unknown.

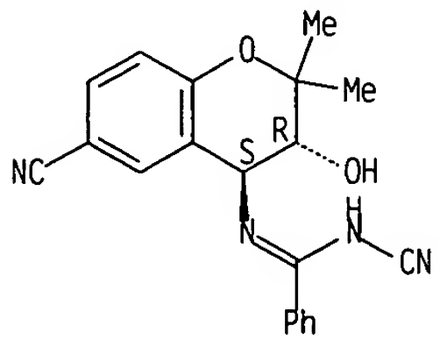


RN 133178-28-6 HCAPLUS
CN Propanimidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)- (9CI) (CA INDEX NAME)



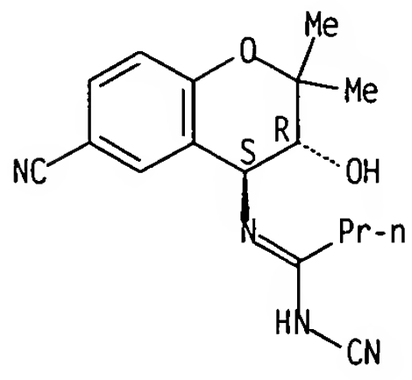
RN 133178-29-7 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 133178-31-1 HCAPLUS
CN Butanimidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

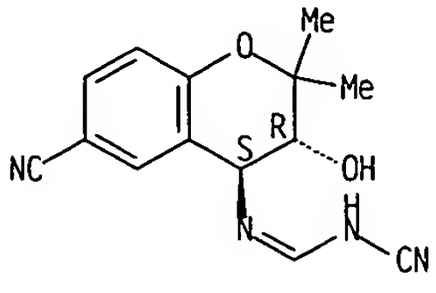
Relative stereochemistry.
Double bond geometry unknown.



RN 133178-32-2 HCAPLUS
CN Methanimidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

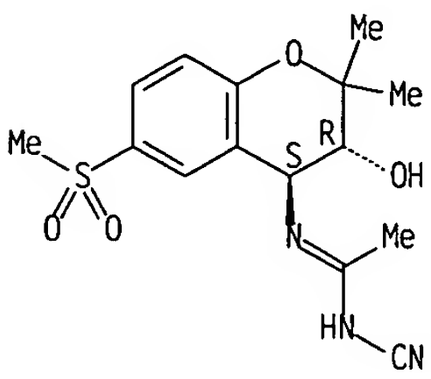
Search done by Noble Jarrell

Relative stereochemistry.
Double bond geometry unknown.



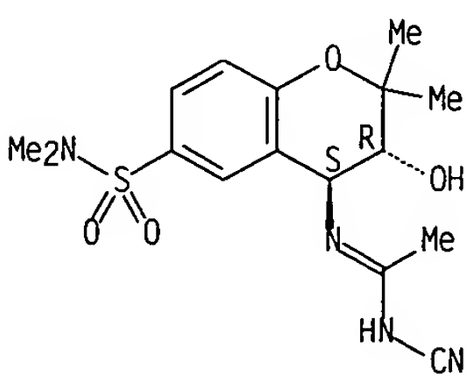
RN 133178-33-3 HCAPLUS
CN Ethanimidamide, N-cyano-N'-[3,4-dihydro-3-hydroxy-2,2-dimethyl-6-(methylsulfonyl)-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 133178-34-4 HCAPLUS
CN Ethanimidamide, N-cyano-N'-[6-[(dimethylamino)sulfonyl]-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

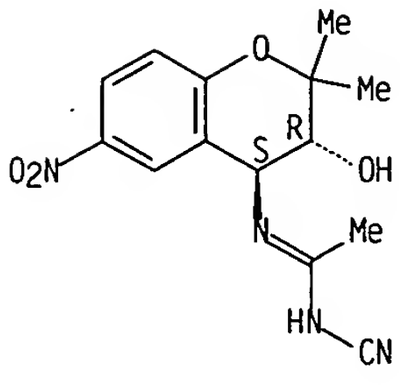
Relative stereochemistry.
Double bond geometry unknown.



RN 133178-35-5 HCAPLUS
CN Ethanimidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

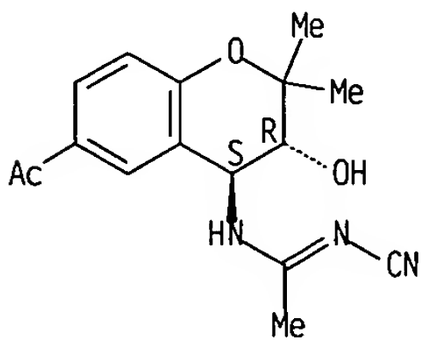
Relative stereochemistry.
Double bond geometry unknown.

Search done by Noble Jarrell



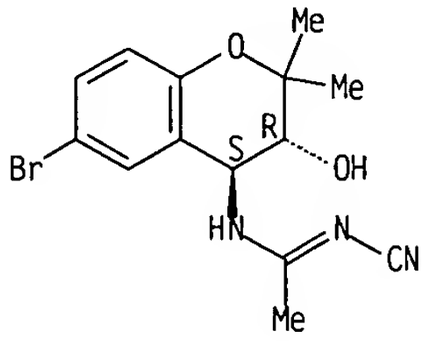
RN 133178-36-6 HCAPLUS
CN Ethanimidamide, N-(6-acetyl-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-N'-cyano-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



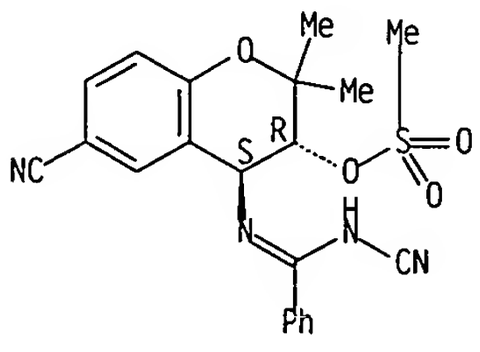
RN 133178-37-7 HCAPLUS
CN Ethanimidamide, N-(6-bromo-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-N'-cyano-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 133178-38-8 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-[6-cyano-3,4-dihydro-2,2-dimethyl-3-[(methylsulfonyl)oxy]-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

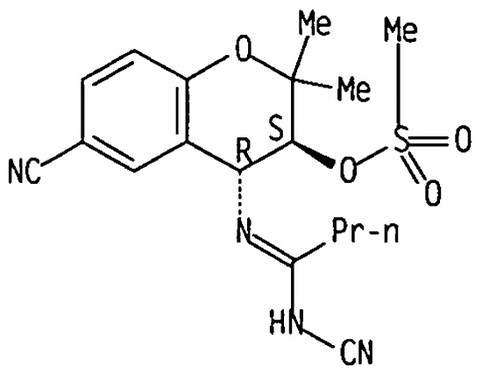
Relative stereochemistry.
Double bond geometry unknown.



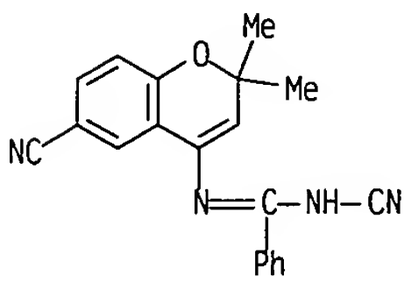
Search done by Noble Jarrell

RN 133178-39-9 HCAPLUS
CN Butanimidamide, N-cyano-N'-[6-cyano-3,4-dihydro-2,2-dimethyl-3-[(methylsulfonyl)oxy]-2H-1-benzopyran-4-yl]-, trans- (9CI) (CA INDEX NAME)

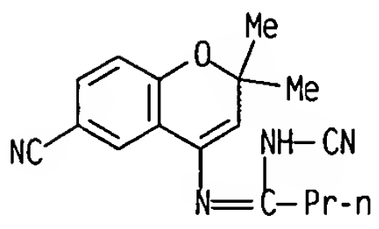
Relative stereochemistry.
Double bond geometry unknown.



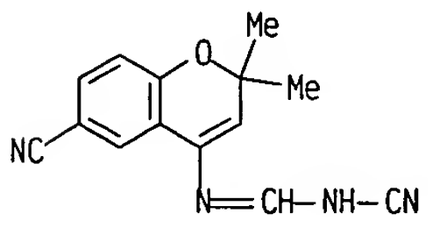
RN 133178-41-3 HCAPLUS
CN Benzenecarboximidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)- (9CI) (CA INDEX NAME)



RN 133178-42-4 HCAPLUS
CN Butanimidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)- (9CI) (CA INDEX NAME)

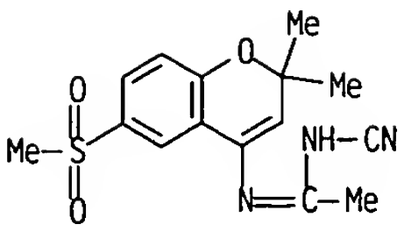


RN 133178-44-6 HCAPLUS
CN Methanimidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)- (9CI) (CA INDEX NAME)

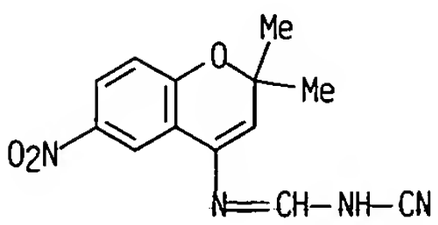


RN 133178-47-9 HCAPLUS
CN Ethanimidamide, N-cyano-N'-[2,2-dimethyl-6-(methylsulfonyl)-2H-1-benzopyran-4-yl]- (9CI) (CA INDEX NAME)

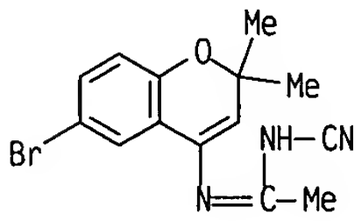
Search done by Noble Jarrell



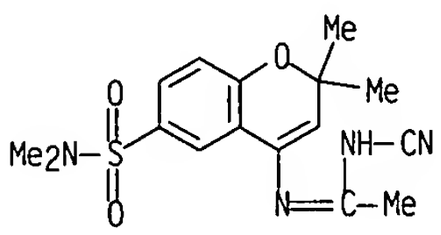
RN 133178-48-0 HCAPLUS
CN Methanimidamide, N-cyano-N'-(2,2-dimethyl-6-nitro-2H-1-benzopyran-4-yl)-
(9CI) (CA INDEX NAME)



RN 133178-50-4 HCAPLUS
CN Ethanimidamide, N-(6-bromo-2,2-dimethyl-2H-1-benzopyran-4-yl)-N'-cyano-
(9CI) (CA INDEX NAME)

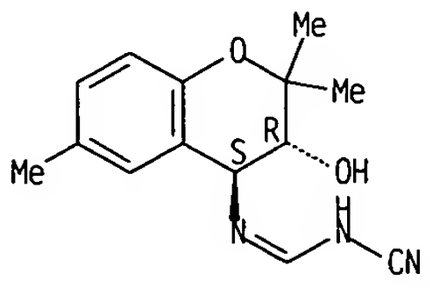


RN 133178-51-5 HCAPLUS
CN Ethanimidamide, N-cyano-N'-[6-[(dimethylamino)sulfonyl]-2,2-dimethyl-2H-1-
benzopyran-4-yl]- (9CI) (CA INDEX NAME)



RN 133178-53-7 HCAPLUS
CN Methanimidamide, N-cyano-N'-(3,4-dihydro-3-hydroxy-2,2,6-trimethyl-2H-1-
benzopyran-4-yl)-, trans- (9CI) (CA INDEX NAME)

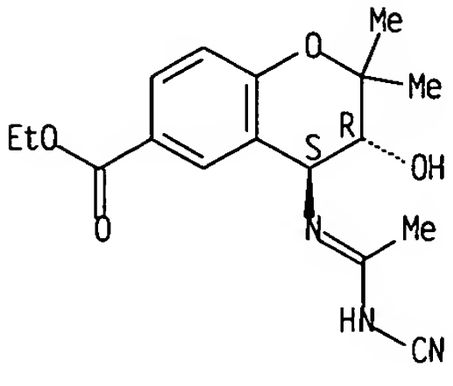
Relative stereochemistry.
Double bond geometry unknown.



RN 133178-55-9 HCAPLUS
CN 2H-1-Benzopyran-6-carboxylic acid, 4-[[1-(cyanoamino)ethylidene]amino]-3,4-
dihydro-3-hydroxy-2,2-dimethyl-, ethyl ester, trans- (9CI) (CA INDEX
NAME)

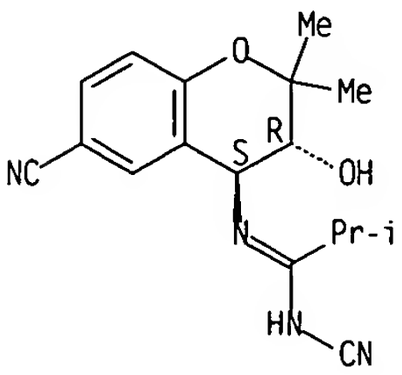
Search done by Noble Jarrell

Relative stereochemistry.
Double bond geometry unknown.



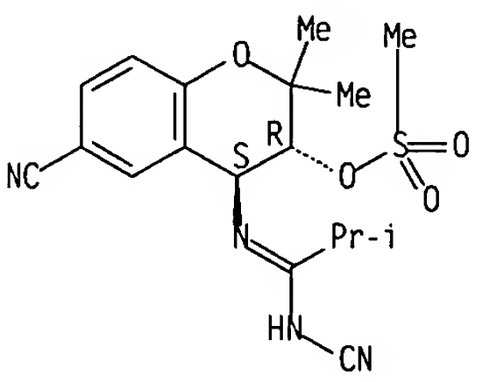
RN 133178-56-0 HCAPLUS
CN Propanimidamide, N-cyano-N'-(6-cyano-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-2-methyl-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.

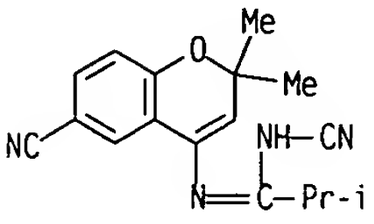


RN 133178-57-1 HCAPLUS
CN Propanimidamide, N-cyano-N'-[6-cyano-3,4-dihydro-2,2-dimethyl-3-[(methylsulfonyl)oxy]-2H-1-benzopyran-4-yl]-2-methyl-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry unknown.



RN 133178-59-3 HCAPLUS
CN Propanimidamide, N-cyano-N'-(6-cyano-2,2-dimethyl-2H-1-benzopyran-4-yl)-2-methyl- (9CI) (CA INDEX NAME)



Search done by Noble Jarrell

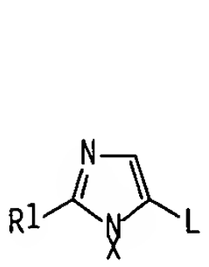
L24 ANSWER 14 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1990:216931 HCAPLUS
DN 112:216931
ED Entered STN: 09 Jun 1990
TI Imidazolylcyclopentathiophenes as herbicides
IN Schneider, Hans Dieter
PA Ciba-Geigy A.-G., Switz.
SO Eur. Pat. Appl., 60 pp.
CODEN: EPXXDW
DT Patent
LA German
IC ICM C07D409-04
ICS A01N043-50; C07D333-78; A01N043-12
CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 5
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 347378	A1	19891220	EP 1989-810423	19890605 <--
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
US 4992090	A	19910212	US 1989-361088	19890605 <--
ZA 8904414	A	19900228	ZA 1989-4414	19890612 <--
JP 02042077	A2	19900213	JP 1989-150331	19890613 <--
PRAI CH 1988-2251	A	19880613 <--		

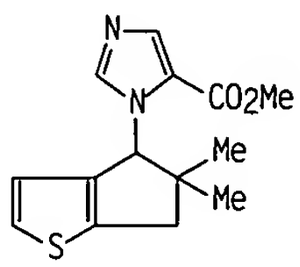
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 347378	ICM	C07D409-04
	ICS	A01N043-50; C07D333-78; A01N043-12

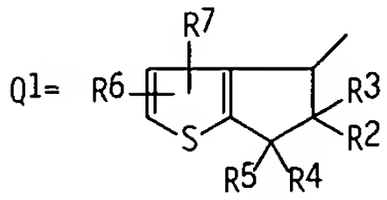
OS MARPAT 112:216931
GI

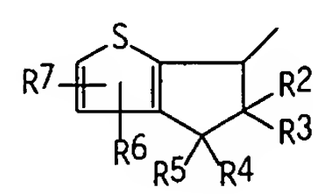


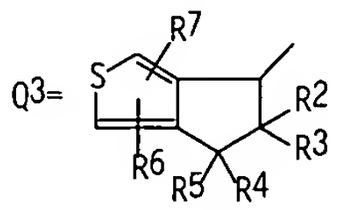
I



II







AB The title compds. (I; X = Q1-Q3; R1 = H, SH; L = cyano, CO2H, CH2OH, alkoxycarbonyl, carbamoyl, oximino, etc.; R2, R3 = H, alkyl, alkenyl, alkynyl, R2R3 = alkylene; R4, R5 = H, alkyl; R6 = H, cyano, halo, alkyl, haloalkyl, NO2; R7 = H, halo, alkyl) were prepared Thus, N-cyano-N'-(5,6-dihydro-5,5-dimethyl-4H-cyclopenta[b]thiophen-2-yl)formamidine (prepn given) was stirred 15 h with KOCMe3 in Me2SO at room temperature BrCH2CO2Me was added and the mixture was stirred 2 h to give the N'-methoxycarbonylmethylformamidine. The latter was refluxed 16 h with

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30% NaOMe in MeOH to give Me 4-amino-1-(5,6-dihydro-5,5-dimethyl-4H-cyclopenta[b]thiophen-4-yl)-5-imidazolecarboxylate. The latter was stirred 16 h with Me3CONO to give imidazole II. II at 4 kg/ha postemergent gave complete control of Avera and Lolium.

ST imidazolylcyclopentathiophene prepn herbicide; cyclopentathiophene imidazolyl prepn herbicide

IT Herbicides
(imidazolylcyclopentathiophenes)

IT 4428-98-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with aminocyclopentathiophene derivative)

IT 96-32-2, Methyl bromoacetate
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with thienylcyanoformamdine)

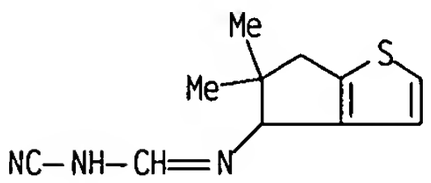
IT 127080-25-5P 127080-26-6P 127080-27-7P 127080-28-8P 127080-29-9P
127080-30-2P 127080-31-3P 127101-99-9P
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as herbicide)

IT 13196-30-0P 14185-76-3P 26554-84-7P 127080-32-4P 127080-33-5P
127080-34-6P **127080-35-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as herbicide intermediate)

IT **127080-35-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as herbicide intermediate)

RN 127080-35-7 HCAPLUS

CN Methanimidamide, N-cyano-N'-(5,6-dihydro-5,5-dimethyl-4H-cyclopenta[b]thien-4-yl)- (9CI) (CA INDEX NAME)



L24 ANSWER 15 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1989:632817 HCAPLUS

DN 111:232817

ED Entered STN: 23 Dec 1989

TI Preparation of 1-substituted imidazole-5-carboxylates as herbicides and plant growth regulators

IN Toepfl, Werner

PA Ciba-Geigy A.-G., Switz.

SO Eur. Pat. Appl., 62 pp.
CODEN: EPXXDW

DT Patent

LA German

IC ICM C07D233-90
ICS C07D409-04; C07D405-04; C07D401-04; A01N043-50; A01N043-16; A01N043-10; A01N043-08; A01N043-42

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 5

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 314852	A2	19890510	EP 1987-810755	19871214 <--
	EP 314852	A3	19900418		
	EP 314852	B1	19931118		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	IL 84809	A1	19921201	IL 1987-84809	19871214 <--

Search done by Noble Jarrell

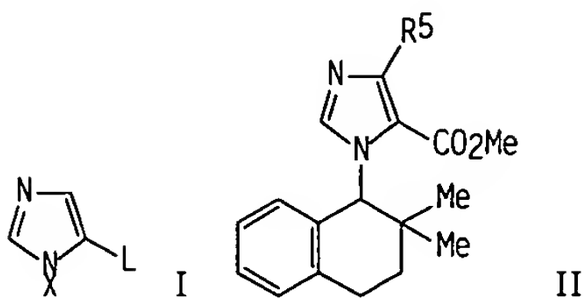
AU 8782554	A1	19890511	AU 1987-82554	19871215 <--
AU 606907	B2	19910221		
ZA 8709396	A	19890726	ZA 1987-9396	19871215 <--
CA 1294612	A1	19920121	CA 1987-554454	19871216 <--
BR 8706929	A	19890718	BR 1987-6929	19871218 <--
US 4921955	A	19900501	US 1987-136167	19871218 <--
JP 01135772	A2	19890529	JP 1987-322626	19871219 <--

PRAI CH 1987-4331 A 19871106 <--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 314852	ICM	C07D233-90
	ICS	C07D409-04; C07D405-04; C07D401-04; A01N043-50; A01N043-16; A01N043-10; A01N043-08; A01N043-42

GI



I II

AB The title compds. [I; L = CO2R1, CONR2R3, CONR4NHR3, CN, etc., X = (substituted) 1-indanyl, 1-tetrahydronaphtholinyl, 5-benzocycloheptenyl, 4-tetrahydrobenzothienyl, 4-tetrahydrobenzofuryl, 5-tetrahydroquinolyl, 9,10-dihydro-9-anthracenyl, 9H-fluoren-9-yl, 5-dibenzo[a,d]cycloheptenyl, 1-dihydronaphthalinyl, etc.; R1 = H, C1-7 alkyl, C3-7 alkenyl, alkynyl, cycloalkyl, alkoxyalkyl, arylalkyl; R2-R4 = H, C1-5 alkyl, C3-5 alkenyl, alkynyl, C3-7 cycloalkoxyl, aryl, etc.; R2R3N = (substituted) piperidinyl, pyrrolidinyl, 2-oxopiperidinyl, 2-oxopyrrolidinyl, morpholinyl, thiomorpholino, piperazinyl, alkyl piperazinyl], useful as herbicides and plant growth regulators (no data), were prepared MeOCOCH2N(Q)CH:NCN (Q = 2,2-dimethyl-1,2,3,4-tetrahydronaphth-1-yl) (preparation given) in MeOH was refluxed with NaOMe for 2 h to give 4-aminoimidazole II (R5 = NH2). The latter in HOAc/HOCOEt was treated with H3PO4 and NaNO2 at 0.degree. to give a diazonium salt solution, which was treated with H3PO2 to give II (R5 = H).

ST arylimidazolecarboxylate prepn herbicide; imidazolecarboxylate aryl prepn herbicide; plant growth regulator arylimidazolecarboxylate prepn

IT Herbicides
(arylimidazolecarboxylates)

IT Plant hormones and regulators
RL: RCT (Reactant); RACT (Reactant or reagent)
(arylimidazolecarboxylates)

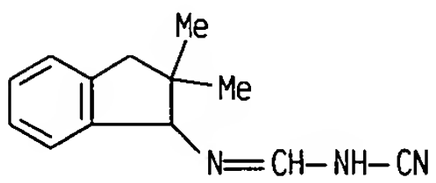
IT 4428-98-2, Ethoxymethylenecyanamide
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with aminotetrahydronaphthalene derivative, in preparation of agrochem.)

IT 96-32-2, Methyl bromoacetate
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with arylaminomethylenecyanamide, in preparation of agrochem.)

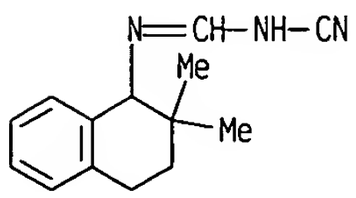
IT 87-62-7, 2,6-Dimethylaniline 91-00-9, Diphenylmethylamine 110324-26-0 119084-51-4 123981-65-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with ethoxymethylenecyanamide, in preparation of agrochem.)

Search done by Noble Jarrell

IT 18391-58-7P 18438-41-0P 69840-18-2P 88490-47-5P 88490-49-7P
101976-67-4P 110323-21-2P 110323-47-2P 110323-50-7P 110323-68-7P
110323-73-4P 110323-75-6P 110323-95-0P 110323-97-2P 110324-02-2P
110324-04-4P 119293-81-1P 119293-82-2P 119293-83-3P 119293-86-6P
123981-29-3P 123981-31-7P 123981-32-8P 123981-33-9P 123981-34-0P
123981-35-1P 124000-03-9P
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as herbicide and plant growth regulator)
IT 105364-24-7P **119084-54-7P** **123981-36-2P** 123981-37-3P
123981-38-4P 123981-39-5P 123981-40-8P 123981-41-9P
123981-42-0P 123981-43-1P 123981-44-2P 123981-45-3P 123981-46-4P
123981-47-5P 123981-48-6P 123981-49-7P 123981-50-0P 123981-51-1P
123981-52-2P 123981-53-3P 123981-54-4P 123981-55-5P 123981-56-6P
123981-57-7P 123981-58-8P 123981-59-9P 123981-61-3P 123981-63-5P
123981-64-6P 123995-90-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediate for herbicide and plant growth regulator)
IT 123981-66-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of arylimidazolecarboxylate agrochem.)
IT **119084-54-7P** **123981-36-2P** **123981-38-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediate for herbicide and plant growth regulator)
RN 119084-54-7 HCAPLUS
CN Methanimidamide, N-cyano-N'-(2,3-dihydro-2,2-dimethyl-1H-inden-1-yl)- (9CI) (CA INDEX NAME)

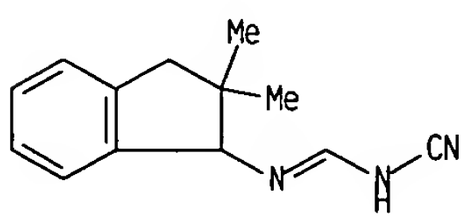


RN 123981-36-2 HCAPLUS
CN Methanimidamide, N-cyano-N'-(1,2,3,4-tetrahydro-2,2-dimethyl-1-naphthalenyl)- (9CI) (CA INDEX NAME)



RN 123981-38-4 HCAPLUS
CN Methanimidamide, N-cyano-N'-(2,3-dihydro-2,2-dimethyl-1H-inden-1-yl)-, (+)- (9CI) (CA INDEX NAME)

Rotation (+).
Double bond geometry unknown.



L24 ANSWER 16 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1989:594762 HCAPLUS

Search done by Noble Jarrell

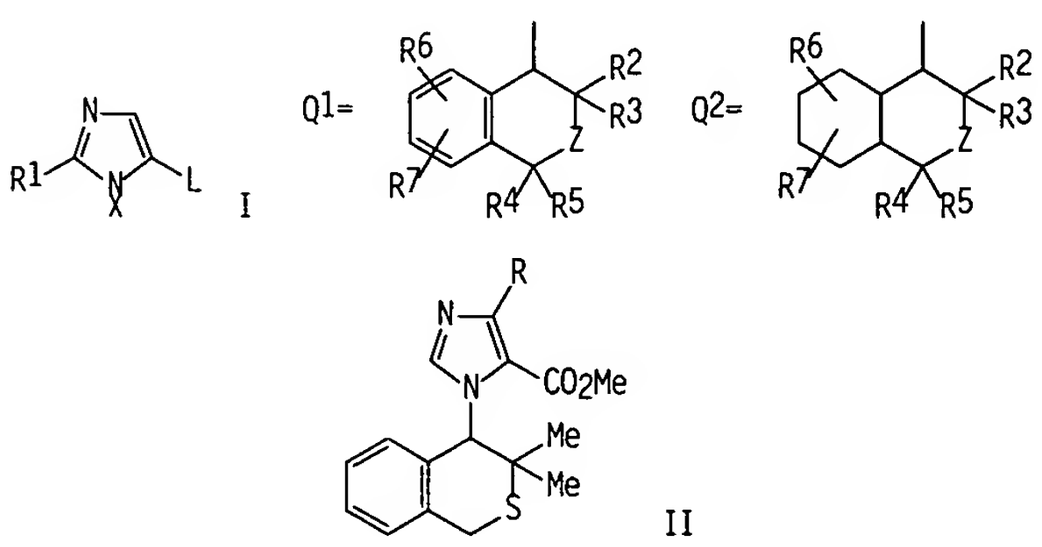
DN 111:194762
ED Entered STN: 25 Nov 1989
TI Preparation of imidazole derivatives as herbicides
IN Schneider, Hans Dieter; Lutz, William R.; Szczepanski, Henry; Topfl, Werner
PA Ciba-Geigy A.-G., Switz.; Janssen Pharmaceutica N. V.
SO Eur. Pat. Appl., 42 pp.
CODEN: EPXXDW
DT Patent
LA German
IC ICM C07D405-04
ICS C07D409-04; C07D401-04; C07D217-24; C07D221-20; C07D311-76; C07D311-96; C07D335-06; C07D335-04
CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 5
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 305332	A2	19890301	EP 1988-810562	19880817 <--
EP 305332	A3	19900404		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
US 4904300	A	19900227	US 1988-233299	19880817 <--
ZA 8806310	A	19890530	ZA 1988-6310	19880825 <--
JP 01121286	A2	19890512	JP 1988-212282	19880826 <--
PRAI CH 1987-3262	A	19870826 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 305332	ICM	C07D405-04
	ICS	C07D409-04; C07D401-04; C07D217-24; C07D221-20; C07D311-76; C07D311-96; C07D335-06; C07D335-04

GI



AB The title compds. [I; R1 = H, SH; L = cyano, CO2R8, CONR9R10, etc.; X = heterocyclyl group Q1, Q2; R2, R3 = H, alkyl, alkenyl, alkynyl; R2R3 = alkylene; R4, R5 = H, alkyl; R4R5 = O; R6 = H, alkoxy, halo, alkyl; R7 = H, alkoxy, halo, alkyl, cyano, haloalkyl, haloalkoxy, (halo)alkylthio, NO2; R8 = alkyl, cycloalkyl, alkoxyalkyl, PhCH2, etc.; R9 = H, alkyl, alkoxy, Ph, PhCH2, etc.; R10 = H, alkyl; NR9R10 = pyrrolidino, piperidino, morpholino; Z = O, S, SO, SO2, NR14; R14 = H, alkyl, alkanoyl, alkoxycarbonyl, CO2CH2Ph, Bz, PhCH2] were prepared QNH2 (Q = Q1, R2 = R3 = Me, R4-R7 = H, Z = S) (preparation given) was stirred 2 h with EtOCH:NCN to give QNHCH:NCN which was stirred 2 h with KOCMe3 in DMSO, followed by addition of BrCH2CO2Me and 16 h stirring, to give NCN:CHNQCH2CO2Me. The latter was refluxed 16 h with NaOMe in MeOH to give

Search done by Noble Jarrell

isothiochromanylimidazolecarboxylate II (R = NH2) which was diazotized and hydrolyzed to give II (R = H) which gave complete control of Echinochloa crus galli and Monarcharia vaginalis at 4 kg/ha.

ST imidazole deriv prepn herbicide

IT Cereal
Corn
Rice
(herbicides for, imidazole derivs. as)

IT Herbicides
(imidazole derivs.)

IT 123470-03-1P **123470-04-2P** 123470-05-3P 123470-06-4P
123470-16-6P 123470-17-7P 123470-18-8P 123470-19-9P 123490-68-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of herbicides)

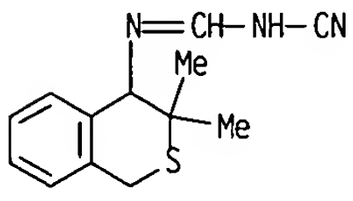
IT 123469-95-4P 123469-96-5P 123469-97-6P 123469-98-7P 123469-99-8P
123470-00-8P 123470-01-9P 123470-02-0P 123470-07-5P 123470-08-6P
123470-09-7P 123470-10-0P 123470-11-1P 123470-12-2P 123470-13-3P
123470-14-4P 123470-15-5P
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as herbicide)

IT 96-32-2, Methylbromoacetate 4428-98-2 16994-33-5, 3,3-Dimethylisothiochroman-4-one
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of herbicides)

IT **123470-04-2P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of herbicides)

RN 123470-04-2 HCAPLUS

CN Methanimidamide, N-cyano-N'-(3,4-dihydro-3,3-dimethyl-1H-2-benzothiopyran-4-yl)- (9CI) (CA INDEX NAME)



L24 ANSWER 17 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1989:95241 HCAPLUS

DN 110:95241

ED Entered STN: 17 Mar 1989

TI Preparation and testing of 1,5-disubstituted 1H-imidazoles as herbicides

IN De Bruyn, Marcel Frans Leopold; Van Lommen, Guy Rosalia Eugene; Lutz, William R.

PA Janssen Pharmaceutica N. V., Belg.; Ciba-Geigy A.-G.

SO Eur. Pat. Appl., 54 pp.
CODEN: EPXXDW

DT Patent

LA English

IC ICM C07D233-84
ICS C07D233-60; C07D233-61; C07D401-06; C07D405-04; C07D405-14; C07D409-04; C07D401-04; A01N043-50; A01N043-36; A01N043-16

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 5

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 289066	A1	19881102	EP 1988-200586	19880329 <--

Search done by Noble Jarrell

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        R:  AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE
     US 4878940          A     19891107    US 1988-173511        19880325 <--
     AU 8813846          A1    19881006    AU 1988-13846         19880329 <--
     AU 598652           B2    19900628
     DK 8801798          A     19881003    DK 1988-1798          19880330 <--
     ZA 8802346          A     19891227    ZA 1988-2346          19880331 <--
     JP 01019070         A2    19890123    JP 1988-78301         19880401 <--
     US 4994103          A     19910219    US 1989-420248        19891012 <--
PRAI GB 1987-7856        A     19870402  <--
     GB 1987-29798       A     19871222  <--
     US 1988-173511      A3    19880325  <--
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
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 EP 289066       ICM    C07D233-84
                 ICS    C07D233-60; C07D233-61; C07D401-06; C07D405-04;
                        C07D405-14; C07D409-04; C07D401-04; A01N043-50;
                        A01N043-36; A01N043-16
OS   MARPAT 110:95241
GI
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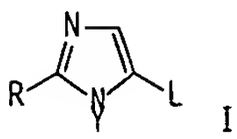

I

AB The title compds. [I; R = H, SH; L = C(:X)R1, CR1(ZR2)2, etc.; X = NH, O, S; R1 = H, C1-7 alkyl, C3-7 cycloalkyl, fluoroalkyl, aralkyl, aryl; R2 = (substituted) C1-5 alkyl, C5-7 cycloalkyl, C1-5 alkoxy, alkylthio, halo; R22 = (substituted) CH2CH2, CH2CH2CH2; Y = 1-indanyl, tetrahydro-1-naphthalenyl, benzocyclohepten-5-yl, tetrahydro-4-benzothienyl, etc.], useful as herbicides, were prepared N-(2-Oxo-2-phenylethyl)-N-(1,2,3,4-tetrahydro-1-npahthalenyl)formamide in THF was treated with NaH in THF; after 20 min MeO2CH was added and the mixture was stirred overnight. The product was stirred with KSCN/HCl/MeOH/H2O to give 11.3% [2-mercapto-1-(1,2,3,4-tetrahydro-1-naphthalenyl)-1H-imidazol-5-yl]phenylmethanone. The latter was stirred in a 1:1 mixture of H2O/concentrate HNO3 at 50.degree. for 30 min to give 8.4% phenyl[1-(1,2,3,4-tetrahydro-1-naphthalenyl)-1H-imidazol-5-yl]methanone-HNO3. At 4 kg/ha preemergent I gave complete control of Echinochloa crus-galli while leaving maize unaffected.

ST imidazole disubstituted prepn herbicide

IT Corn
Rice
(herbicides for, imidazole derivs. as)

IT Herbicides
(imidazole derivs.)

IT 110323-21-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(Grignard reaction of, in preparation of herbicide)

IT 4428-98-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with dimethylindanamine, in preparation of herbicide)

IT 118259-95-3P 118259-96-4P 119084-30-9P 119084-31-0P 119084-32-1P
119084-34-3P 119084-35-4P 119084-36-5P 119084-37-6P 119084-39-8P
119084-40-1P 119084-41-2P 119084-42-3P 119084-43-4P 119084-44-5P
119084-45-6P 119084-46-7P 119084-47-8P 119084-48-9P 119084-49-0P
119084-56-9P 119084-57-0P 119084-58-1P 119084-59-2P 119084-60-5P
119084-61-6P 119084-62-7P 119084-63-8P 119084-64-9P 119084-65-0P
119084-66-1P 119084-67-2P 119084-69-4P 119084-70-7P 119084-72-9P
119084-73-0P 119084-74-1P 119084-75-2P 119084-77-4P 119084-78-5P
119084-79-6P 119084-81-0P 119084-82-1P 119084-83-2P 119084-85-4P

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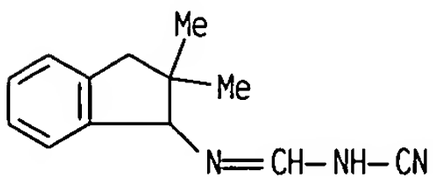
119084-86-5P 119084-87-6P 119084-88-7P 119084-89-8P 119084-91-2P
119084-92-3P 119084-94-5P 119084-95-6P 119084-97-8P 119084-99-0P
119085-01-7P 119085-02-8P 119085-03-9P 119085-04-0P 119085-05-1P
119085-06-2P 119085-07-3P 119085-08-4P 119085-09-5P 119085-10-8P
119085-11-9P 119085-12-0P 119085-13-1P 119085-14-2P 119085-15-3P
119085-16-4P 119085-17-5P 119085-18-6P 119085-19-7P 119085-20-0P
119085-21-1P 119085-22-2P 119085-23-3P 119085-24-4P
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as herbicide)

IT 119084-52-5P 119084-53-6P **119084-54-7P** 119084-55-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediate for herbicide)

IT 18438-41-0 118260-49-4 118582-12-0 119084-50-3 119084-51-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of herbicide)

IT **119084-54-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediate for herbicide)

RN 119084-54-7 HCAPLUS
CN Methanimidamide, N-cyano-N'-(2,3-dihydro-2,2-dimethyl-1H-inden-1-yl)- (9CI) (CA INDEX NAME)



L24 ANSWER 18 OF 18 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1989:75497 HCAPLUS
DN 110:75497
ED Entered STN: 04 Mar 1989
TI Preparation of tricyclic 1H-imidazole-5-carboxylates as herbicides
IN Lutz, William R.; Verschueren, Wim G.; Fischer, Hanspeter; Van Lommen, Guy R. E.
PA Janssen Pharmaceutica N. V., Belg.
SO Eur. Pat. Appl., 29 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C07D233-90
ICS C07D401-04; C07D405-04; C07D409-04; A01N043-50
ICA C07C101-18; C07C103-48; C07C087-455; C07C121-43
CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 5
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 275603	A1	19880727	EP 1987-202588	19871221 <--
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
US 4830664	A	19890516	US 1987-134440	19871217 <--
DK 8706821	A	19880624	DK 1987-6821	19871222 <--
JP 63166869	A2	19880711	JP 1987-323047	19871222 <--
HU 46677	A2	19881128	HU 1987-5955	19871222 <--
HU 198188	B	19890828		
ZA 8709613	A	19890830	ZA 1987-9613	19871222 <--
IL 84916	A1	19910718	IL 1987-84916	19871222 <--
AU 8782976	A1	19880623	AU 1987-82976	19871223 <--
AU 595085	B2	19900322		
BR 8707032	A	19880802	BR 1987-7032	19871223 <--

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     US 4927449          A     19900522    US 1988-289947        19881227 <--
PRAI GB 1986-30759       A     19861223  <--
     US 1987-134440      B3    19871217  <--
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
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 EP 275603       ICM    C07D233-90
                 ICS    C07D401-04; C07D405-04; C07D409-04; A01N043-50
                 ICA    C07C101-18; C07C103-48; C07C087-455; C07C121-43
OS   MARPAT 110:75497
GI   For diagram(s), see printed CA Issue.
AB   The title compds. [I; A = alkylene, cycloalkanediyl; R1 = H, SH; R2 = H,
     alkyl, alkoxyalkyl, arylalkyl, etc.; R3-R6 = halo, (un)substituted alkyl,
     alkoxy, aryl, etc.; R7, R8 = H, alkyl, alkoxy, halo, etc.; Y = O, SOm,
     NR9, CH2; R9 = H, alkyl, alkanoyl, 4-MeC6H4SO2; m = 0-2; n = 1-3] were
     prepared  2,3,3A,8a-tetrahydrocyclopenta[a]inden-8(1H)-one and
     HCl.cntdot.H2NCH2CO2Me in MeOH containing KOAc and thiophene were hydrogenated
     over Pd/C to give RNHCH2CO2Me (R = 1,2,3,3a,8,8a-
     hexahydrocyclopenta[a]inden-8-yl) which was stirred with HCO2H in Ac2O to
     give RN(CHO)CO2Me.  The latter was stirred overnight with HCO2Me in THF
     containing NaH and the product was stirred overnight at 60.degree. with KSCN
     and HCl in aqueous MeOH to give cyclopentaindenylimidazole II which gave
     complete kill of Echinochloa crus galli at 4 kg/ha.
ST   imidazolecarboxylate tricyclyl prepn herbicide
IT   Rice
        (herbicides for, tricycylic imidazolecarboxylates)
IT   Herbicides
        (tricyclic imidazolecarboxylates)
IT   118788-14-0P   118788-15-1P   118788-17-3P   118788-18-4P   118788-20-8P
     118788-21-9P 118788-22-0P   118788-23-1P   118788-24-2P
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
     (Reactant or reagent)
        (preparation and reaction of, in preparation of herbicides)
IT   118788-12-8P   118788-13-9P   118788-26-4P   118788-27-5P   118788-29-7P
     118788-30-0P   118788-32-2P   118788-33-3P   118788-34-4P   118788-35-5P
     118788-36-6P   118788-37-7P   118788-38-8P   118788-39-9P
     RL: AGR (Agricultural use); BAC (Biological activity or effector, except
     adverse); BSU (Biological study, unclassified); SPN (Synthetic
     preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
        (preparation of, as herbicide)
IT   96-32-2   1203-67-4   3084-00-2   5680-79-5   65226-98-4   118788-16-2
     118788-19-5   118788-23-1   118788-40-2
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (reaction of, in preparation of herbicides)
IT   118788-22-0P
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
     (Reactant or reagent)
        (preparation and reaction of, in preparation of herbicides)
RN   118788-22-0  HCAPLUS
CN   Methanimidamide, N-cyano-N'-(1,2,3,4,4a,9,9a,10-octahydro-9-anthracenyl)-
     (9CI)  (CA INDEX NAME)
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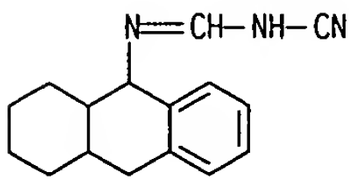


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